



LED-TV

Chassis : U63A

Model : UN40D6400UF UN32D6500VF
UN46D6400UF UN40D6500VF
UN55D6400UF UN46D6500VF
UN40D6420UF UN55D6500VF
UN46D6420UF UN46D6900WF
UN55D6420UF UN55D6900WF
UN40D6450UF
UN46D6450UF
UN55D6450UF

SERVICEManual

TFT-LCD TV



UN**D6****F

Contents

1. Precautions
2. Product specifications
3. Disassembly and Reassembly
4. Troubleshooting
5. Wiring Diagram

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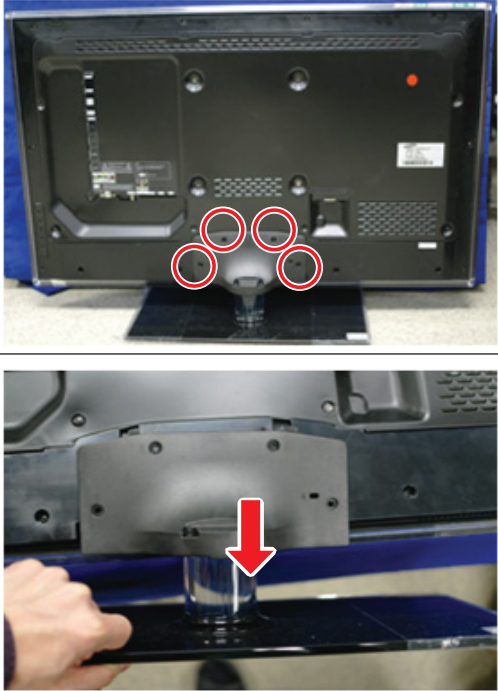




3. Disassembly and Reassembly

This section of the service manual describes the disassembly and reassembly procedures for the LED TV.

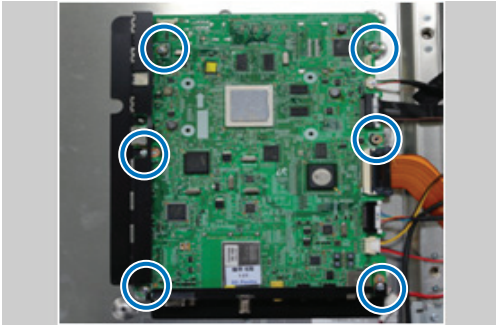

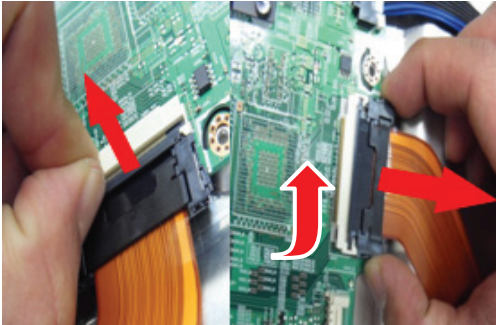


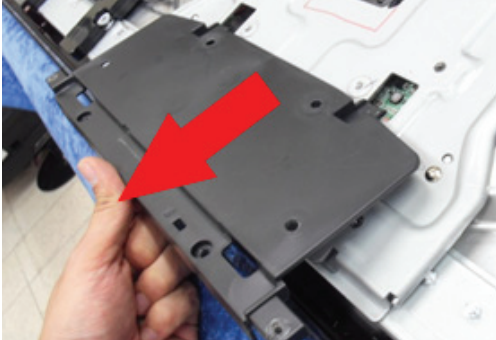
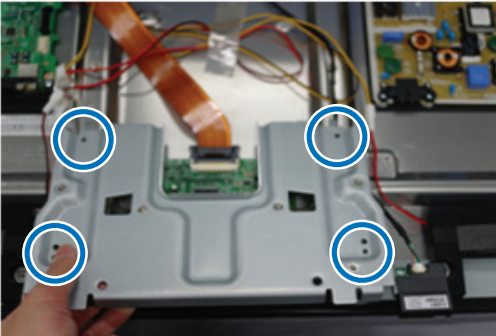

⚠ WARNING: This LED TV contains electrostatically sensitive devices. Use caution when handling these components.

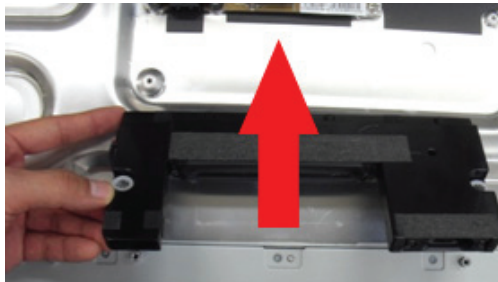
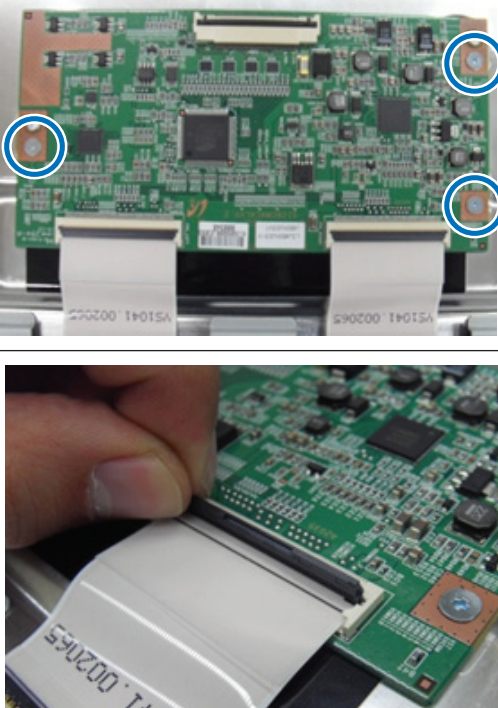

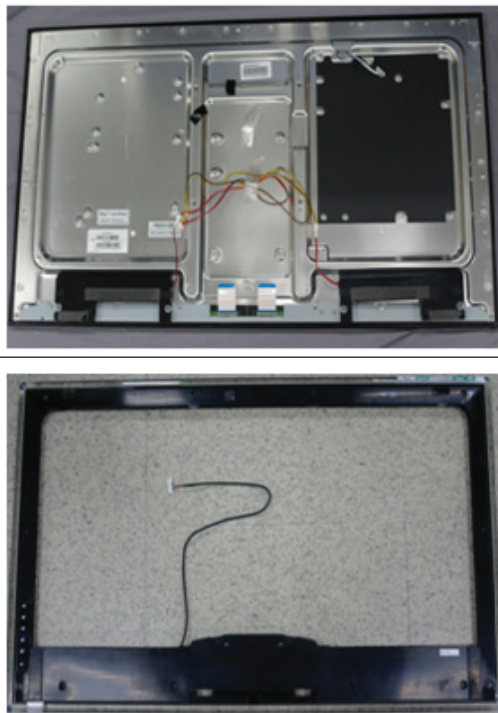
3-1. Disassembly and Reassembly

⚠ Cautions: 1. Disconnect the LED TV from the power source before disassembly.
2. Follow these directions carefully; never use metal instruments to pry apart the cabinet.

Description	Picture Description	Screws
1 Place TV face down on cushioned table. Remove screws from the Stand. Remove stand.		 6001-002621 SCREW-MACHINE (M4, L8-BLK)
2 Remove the screws of Rear-Cover.		 6001-002671 SCREW-MACHINE (M3, L6-BLK)
3 Lift up and remove the rear-cover. * Caution : Be careful when you lift up the rear-cover, It's really sharp.		

3. Disassembly and Reassemble

Description	Picture Description	Screws
4 Remove the screws of Main Board.		 6001-002653 SCREW-MACHINE (M3, L6-WHT)
<p>* Notice : New type of LVDS connection. applied to 11 year model. (Double locking) 1. Up the first locking 2. Push the second locking and detach connection.</p>		
Remove the screws of IP Board. Remove the IP Board.		 6001-002653 SCREW-MACHINE (M3, L6-WHT)
5 Remove the Cover-Bottom.		
6 Remove the screws of Stand-Link BLKT, and remove Stand-Link BLKT.		 6001-002653 SCREW-MACHINE (M3, L6-WHT)

Description	Picture Description	Screws
7 Remove the Speakers. (R/L)		
8 Remove the screws of T-con. Unlock the locking of T-con cable.		 6001-002653 SCREW-MACHINE (M3, L6-WHT)
9 Panel. Front		

※ Reassembly procedures are in the reverse order of disassembly procedures.

1. Precautions

1-1. Safety Precautions

Follow these safety, servicing and ESD precautions to prevent damage and to protect against potential hazards such as electrical shock.

1-1-1. Warnings

1. For continued safety, do not attempt to modify the circuit board.
2. Disconnect the AC power and DC power jack before servicing.

1-1-2. Servicing the LED TV

1. When servicing the LED TV, Disconnect the AC line cord from the AC outlet.
2. It is essential that service technicians have an accurate voltage meter available at all times.
Check the calibration of this meter periodically.

1-1-3. Fire and Shock Hazard

Before returning the LED TV to the user, perform the following safety checks:

1. Inspect each lead dress to make certain that the leads are not pinched or that hardware is not lodged between the chassis and other metal parts in the LED TV.
2. Inspect all protective devices such as nonmetallic control knobs, insulating materials, cabinet backs, adjustment and compartment covers or shields, isolation resistor/capacitor networks, mechanical insulators, etc.
3. Leakage Current Hot Check (Figure 1-1):

WARNING : Do not use an isolation transformer during this test.

Use a leakage current tester or a metering system that complies with American National Standards Institute (ANSI C101.1, Leakage Current for Appliances), and Underwriters Laboratories (UL Publication UL1410, 59.7).

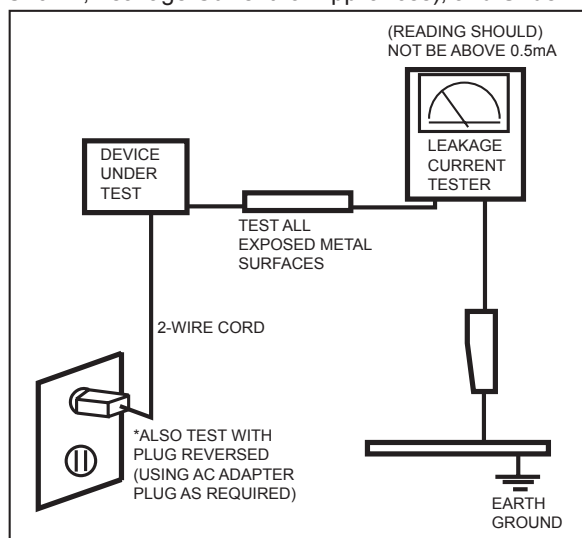



Figure 1-1. Leakage Current Test Circuit

4. With the unit completely reassembled, plug the AC line cord directly into a 120V AC outlet. With the unit's AC switch first in the ON position and then OFF, measure the current between a known earth ground (metal water pipe, conduit, etc.) and all exposed metal parts, including: metal cabinets, screwheads and control shafts.
The current measured should not exceed 0.5 milliamp.
Reverse the power-plug prongs in the AC outlet and repeat the test.

1-1-4. Product Safety Notices

Some electrical and mechanical parts have special safety-related characteristics which are often not evident from visual inspection. The protection they give may not be obtained by replacing them with components rated for higher voltage, wattage, etc. Parts that have special safety characteristics are identified by  on schematics and parts lists. A substitute replacement that does not have the same safety characteristics as the recommended replacement part might create shock, fire and/or other hazards. Product safety is under review continuously and new instructions are issued whenever appropriate.

1-2. Servicing Precautions

WARNING: An electrolytic capacitor installed with the wrong polarity might explode.

Caution: Before servicing units covered by this service manual, read and follow the Safety Precautions section of this manual.

Note: If unforeseen circumstances create conflict between the following servicing precautions and any of the safety precautions, always follow the safety precautions.

1-2-1 General Servicing Precautions

1. Always unplug the unit's AC power cord from the AC power source and disconnect the DC Power Jack before attempting to:
(a) remove or reinstall any component or assembly, (b) disconnect PCB plugs or connectors, (c) connect a test component in parallel with an electrolytic capacitor.
2. Some components are raised above the printed circuit board for safety. An insulation tube or tape is sometimes used. The internal wiring is sometimes clamped to prevent contact with thermally hot components. Reinstall all such elements to their original position.
3. After servicing, always check that the screws, components and wiring have been correctly reinstalled. Make sure that the area around the serviced part has not been damaged.
4. Check the insulation between the blades of the AC plug and accessible conductive parts (examples: metal panels, input terminals and earphone jacks).
5. Insulation Checking Procedure: Disconnect the power cord from the AC source and turn the power switch ON. Connect an insulation resistance meter (500 V) to the blades of the AC plug. The insulation resistance between each blade of the AC plug and accessible conductive parts (see above) should be greater than 1 megohm.
6. Always connect a test instrument's ground lead to the instrument chassis ground before connecting the positive lead; always remove the instrument's ground lead last.

1-3. Electrostatically Sensitive Devices (ESD) Precautions

Some semiconductor (solid state) devices can be easily damaged by static electricity. Such components are commonly called Electrostatically Sensitive Devices (ESD). Examples of typical ESD are integrated circuits and some field-effect transistors. The following techniques will reduce the incidence of component damage caused by static electricity.

1. Immediately before handling any semiconductor components or assemblies, drain the electrostatic charge from your body by touching a known earth ground. Alternatively, wear a discharging wrist-strap device. To avoid a shock hazard, be sure to remove the wrist strap before applying power to the LED TV.
2. After removing an ESD-equipped assembly, place it on a conductive surface such as aluminum foil to prevent accumulation of an electrostatic charge.
3. Do not use freon-propelled chemicals. These can generate electrical charges sufficient to damage ESDs.
4. Use only a grounded-tip soldering iron to solder or desolder ESDs.
5. Use only an anti-static solder removal device. Some solder removal devices not classified as "anti-static" can generate electrical charges sufficient to damage ESDs.
6. Do not remove a replacement ESD from its protective package until you are ready to install it. Most replacement ESDs are packaged with leads that are electrically shorted together by conductive foam, aluminum foil or other conductive materials.
7. Immediately before removing the protective material from the leads of a replacement ESD, touch the protective material to the chassis or circuit assembly into which the device will be installed.
Caution: Be sure no power is applied to the chassis or circuit and observe all other safety precautions.
8. Minimize body motions when handling unpackaged replacement ESDs. Motions such as brushing clothes together, or lifting your foot from a carpeted floor can generate enough static electricity to damage an ESD.




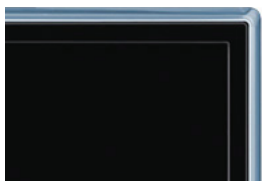





1-4. Installation Precautions

1. For safety reasons, more than a people are required for carrying the product.
2. Keep the power cord away from any heat emitting devices, as a melted covering may cause fire or electric shock.
3. Do not place the product in areas with poor ventilation such as a bookshelf or closet. The increased internal temperature may cause fire.
4. Bend the external antenna cable when connecting it to the product. This is a measure to protect it from being exposed to moisture. Otherwise, it may cause a fire or electric shock.
5. Make sure to turn the power off and unplug the power cord from the outlet before repositioning the product. Also check the antenna cable or the external connectors if they are fully unplugged. Damage to the cord may cause fire or electric shock.
6. Keep the antenna far away from any high-voltage cables and install it firmly. Contact with the highvoltage cable or the antenna falling over may cause fire or electric shock.
7. When installing the product, leave enough space (0.4m) between the product and the wall for ventilation purposes. A rise in temperature within the product may cause fire.

2. Product specifications

2-1. Specifications Information

2-1-1. Model Comparison

Model			UD6500VF			UD6400			UD6900		
Front view	All										
Detail view	All										
	All										
Front Color	All		T_Blue/CB			Clear/Wine Red			Clear/CB		
Dimensions W x D x H (inches)	32"	Without Stnand	29.36	1.18	17.46						
		With Stand	29.36	9.45	19.83						
	40"	Without Stnand	36.73	1.18	21.61	36.59	1.18	21.47			
		With Stand	36.73	10.04	23.94	36.59	10.04	23.87			
	46"	Without Stnand	42.06	1.18	24.61	41.93	1.18	24.48	41.69	1.18	24.25
		With Stand	42.06	10.83	26.91	41.93	10.83	26.88	41.69	10.83	26.77
	55"	Without Stnand	49.56	1.18	28.81	49.42	1.18	28.67	49.12	1.18	28.45
		With Stand	49.56	10.83	31.16	49.42	10.83	31.83	49.12	10.83	31.71
Weight (lbs)	32"	Without Stnand	15.56								
		With Stand	21.52								
	40"	Without Stnand	22.00			21.85					
		With Stand	29.28			27.40					
	46"	Without Stnand	28.00			26.46			26.39		
		With Stand	36.82			35.80			35.74		
	55"	Without Stnand	38.14			37.94			37.81		
		With Stand	47.40			48.26			48.13		
Panel Type	All		Super Clear			Super Clear			Super Clear		
Flash	All		2 G			2 G			2 G		
DDR	All		512 MB			512 MB			768 MB		
Feature	All		3D / Internet@TV / DLNA			3D / Internet@TV / DLNA			3D / Internet@TV DLNA / Full browsing		

2-1-2. Feature & Specifications

Model	UN32D6500VF	
Feature		
<ul style="list-style-type: none">▶ Digital-TV, RF, 4-HDMI, 1-Component, 2-A/V, 3-USB2.0(Media Play), D-SUB , LAN, Wi-Fi▶ Contrast Ratio : Mega Contrast▶ Dynamic contrast , Super-PVA▶ PIP(in HDMI 1, 2, 3, 4, Component 1, PC Mode and Sub picture is available only in TV mode(DTV/ATV))▶ Dolby Digital+, SRS theater, DVIX HD		
Specifications		
Item	Description	
LCD Panel	32 inch FHD 120 Hz	
Scanning Frequency	Horizontal : 120 kHz ~ 139.2 kHz (Automatic) Vertical : 94 Hz ~ 122 Hz (Automatic)	
Display Colors	1.07B	
Maximum resolution	Horizontal : 1920 Pixels Vertical : 1080 Pixels	
Input Signal	Analog 0.7 Vp-p ± 5% positive at 75Ω , internally terminated	
Input Sync Signal	H/V Separate, TTL, P. or N.	
Maximum Pixel Clock rate	310 MHz	
Active Display Horizontal/Vertical	698.4(H) x 392.85 (V) (mm)	
AC power voltage & Frequency	AC 110V ~ 220V, 60 Hz	
Power Consumption	100 W (Under 0.1 W, Stand by)	
TV System	Tuning	Frequency Synthesize (Refer to detailed Frequency Table)
	System	ATSC & Clear QAM
	Sound	NTSC-M, Dolby Digital +
Environmental Considerations	Operating Temperature : 50°F ~ 104°F (10°C ~ 40°C) Operating Humidity : 10% ~ 80%, non-condensing Storage temperature : -13°F ~ 113°F (-25°C ~ 45°C) Storage Humidity : 5% ~ 95%, non-condensing	
Audio spec.	- MAX Internal speaker Out : Right/Left(3 W) - Equalizer : 5 Band - Output Frequency : RF : 20 Hz ~ 15.4 kHz AV/Componet / HDMI : 20 Hz ~ 20 kHz	
Note: Dolby Digital +, Game Mode, Film Mode, Energy Saving, Anynet+		


Model	UN40D6500VF / UN40D64*0UF / UN40D6900WF	
Feature		
<ul style="list-style-type: none">▶ Digital-TV, RF, 4-HDMI, 1-Component, 2-A/V, 3-USB2.0(Media Play), D-SUB , LAN, Wi-Fi▶ Contrast Ratio : Mega Contrast▶ Dynamic contrast , Super-PVA▶ PIP(in HDMI 1, 2, 3, 4, Component 1, PC Mode and Sub picture is available only in TV mode(DTV/ATV))▶ Dolby Digital+, SRS theater, DVIX HD		
Specifications		
Item	Description	
LCD Panel	40 inch FHD 120Hz	
Scanning Frequency	Horizontal : 120 kHz ~ 139.2 kHz (Automatic) Vertical : 94 Hz ~ 122 Hz (Automatic)	
Display Colors	1.07B	
Maximum resolution	Horizontal : 1920 Pixels Vertical : 1080 Pixels	
Input Signal	Analog 0.7 Vp-p ± 5% positive at 75Ω , internally terminated	
Input Sync Signal	H/V Separate, TTL, P. or N.	
Maximum Pixel Clock rate	310 MHz	
Active Display Horizontal/Vertical	698.4(H) X 392.85(V) (mm)	
AC power voltage & Frequency	AC 110V ~ 220V, 60 Hz	
Power Consumption	140 W (Under 0.3 W, Stand by)	
TV System	Tuning	Frequency Synthesize (Refer to detailed Frequency Table)
	System	ATSC & Clear QAM
	Sound	NTSC-M, Dolby Digital +
Environmental Considerations	Operating Temperature : 50°F ~ 104°F (10°C ~ 40°C) Operating Humidity : 10% ~ 80%, non-condensing Storage temperature : -13°F ~ 113°F (-25°C ~ 45°C) Storage Humidity : 5% ~ 95%, non-condensing	
Audio spec.	- MAX Internal speaker Out : Right/Left(3 W) - Equalizer : 5 Band - Output Frequency : RF : 20 Hz ~ 15.4 kHz AV/Componet / HDMI : 20 Hz ~ 20 kHz	
Note: Dolby Digital +, Game Mode, Film Mode, Energy Saving, Anynet+		

2. Product specifications

Model	UN46D6500VF / UN46D64*0UF / UN46D6900WF	
Feature		
<div><div><div>▶ Digital-TV, RF, 4-HDMI, 1-Component, 2-A/V, 3-USB2.0(Media Play), D-SUB , LAN, Wi-Fi</div><div>▶ Contrast Ratio : Mega Contrast</div><div>▶ Dynamic contrast , Super-PVA</div><div>▶ PIP(in HDMI 1, 2, 3, 4, Component 1, PC Mode and Sub picture is available only in TV mode(DTV/ATV))</div><div>▶ Dolby Digital+, SRS theater, DVIX HD</div><div>▶ Full Browsing</div></div><div>For LED 6900 series</div></div>		
Specifications		
Item	Description	
LCD Panel	46 inch FHD 120Hz	
Scanning Frequency	Horizontal : 120 kHz ~ 139.2 kHz (Automatic) Vertical : 94 Hz ~ 122 Hz (Automatic)	
Display Colors	1.07B	
Maximum resolution	Horizontal : 1920 Pixels Vertical : 1080 Pixels	
Input Signal	Analog 0.7 Vp-p ± 5% positive at 75Ω , internally terminated	
Input Sync Signal	H/V Separate, TTL, P. or N.	
Maximum Pixel Clock rate	310 MHz	
Active Display Horizontal/Vertical	819.36(H) X 460.89(V) (mm)	
AC power voltage & Frequency	AC 110V ~ 220V, 60 Hz	
Power Consumption	150 W (Under 0.3 W, Stand by)	
TV System	Tuning	Frequency Synthesize (Refer to detailed Frequency Table)
	System	ATSC & Clear QAM
	Sound	NTSC-M, Dolby Digital +
Environmental Considerations	Operating Temperature : 50°F ~ 104°F (10°C ~ 40°C) Operating Humidity : 10% ~ 80%, non-condensing Storage temperature : -13°F ~ 113°F (-25°C ~ 45°C) Storage Humidity : 5% ~ 95%, non-condensing	
Audio spec.	- MAX Internal speaker Out : Right/Left(3 W) - Equalizer : 5 Band - Output Frequency : RF : 20 Hz ~ 15.4 kHz AV/Componet / HDMI : 20 Hz ~ 20 kHz	
Note: Dolby Digital +, Game Mode, Film Mode, Energy Saving, Anynet+		

Model	UN55D6500VF / UN55D64*0UF / UN55D6900WF	
Feature		
<div><div><div>▶ Digital-TV, RF, 4-HDMI, 1-Component, 2-A/V, 3-USB2.0(Media Play), D-SUB , LAN, Wi-Fi</div><div>▶ Contrast Ratio : Mega Contrast</div><div>▶ Dynamic contrast , Super-PVA</div><div>▶ PIP(in HDMI 1, 2, 3, 4, Component 1, PC Mode and Sub picture is available only in TV mode(DTV/ATV))</div><div>▶ Dolby Digital+, SRS theater, DVIX HD</div><div>▶ Full Browsing</div></div><div>For LED 6900 series</div></div>		
Specifications		
Item	Description	
LCD Panel	55 inch FHD 120Hz	
Scanning Frequency	Horizontal : 120 kHz ~ 139.2 kHz (Automatic) Vertical : 94 Hz ~ 122 Hz (Automatic)	
Display Colors	1.07B	
Maximum resolution	Horizontal : 1920 Pixels Vertical : 1080 Pixels	
Input Signal	Analog 0.7 Vp-p ± 5% positive at 75Ω , internally terminated	
Input Sync Signal	H/V Separate, TTL, P. or N.	
Maximum Pixel Clock rate	310 MHz	
Active Display Horizontal/Vertical	885.6(H) X 498.15(V) (mm)	
AC power voltage & Frequency	AC 110V ~ 220V, 60 Hz	
Power Consumption	150 W (Under 0.1 W, Stand by)	
TV System	Tuning	Frequency Synthesize (Refer to detailed Frequency Table)
	System	ATSC & Clear QAM
	Sound	NTSC-M, Dolby Digital +
Environmental Considerations	Operating Temperature : 50°F ~ 104°F (10°C ~ 40°C) Operating Humidity : 10% ~ 80%, non-condensing Storage temperature : -13°F ~ 113°F (-25°C ~ 45°C) Storage Humidity : 5% ~ 95%, non-condensing	
Audio spec.	- MAX Internal speaker Out : Right/Left(3 W) - Equalizer : 5 Band - Output Frequency : RF : 20 Hz ~ 15.4 kHz AV/Componet / HDMI : 20 Hz ~ 20 kHz	
Note: Dolby Digital +, Game Mode, Film Mode, Energy Saving, Anynet+		

2-1-3. Spec Comparison to the Old Models

Model	UD6500	UC6000
Design		
Display Type	LED TV 2D	LED TV 2D
Built-in Tuner	O	O
Resolution	1920 x 1080	1920 x 1080
LCD Panel	TFT LCD Panel 120Hz	TFT LCD Panel 120Hz
Picture ratio	16:9	16:9
Contrast Ratio	Mega contrast	70000:1
Picture Enhancer	DNle	DNle
Equalizer	5 Band	5 Band
Auto Volume Control	O	O
Surround Sound	Dolby Digital plus	Dolby Digital plus
Speaker Output	10W + 10W	10W + 10W
PIP	O	O
Antena	DTV 1 (Cable/Air)	DTV 1 (Cable/Air)

2-2. Detail Factory Option

※ If you replace the main board with new one, please change the factory option as well.
The options you must change are "Type" and "Front Color".

2-1-1. UD6400

Model Name		UN40D6400UF	UN46D6400UF	UN55D6400UF
Panel	Vendor	CMI	CMI	AML
	CODE	BN07-00997A	BN07-00998A	BN95-00451A
	SPEC	LD400CSC-C1	LD460CSC-C1	LTJ550HJ06-V
SMPS	Vendor	DONGYANG	DONGYANG	HANSOL
	CODE	BN44-00427B	BN44-00427B	BN44-00428B
	SPEC	BN44-00427B	BN44-00427B	BN44-00428B
Main Assy	Chassis Ass'y	BN91-06484A	BN91-06484B	BN91-06484C
	PBA Ass'y code	BN94-04359A	BN94-04359B	BN94-04359C
1	Factory Reset	-	-	-
2	Type	40P1UF6E	46P1UF6E	55A1UF6E
3	Local set	US	US	US
4	Model	D6400	D6400	D6400
5	Tuner	SEC_Si2173	SEC_Si2173	SEC_Si2173
6	DDR	-	-	-
7	Light Effect	OFF	OFF	OFF
8	Ch Table	NONE	NONE	NONE
9	Country	-	-	-
10	Front Color	U-T-CL-M	U-T-CL-M	U-T-CL-M

2-1-2. UD6420

Model Name		UN40D6420UF	UN46D6420UF	UN55D6420UF
Panel	Vendor	CMI	CMI	AML
	CODE	BN07-00997A	BN07-00998A	BN95-00451A
	SPEC	LD400CSC-C1	LD460CSC-C1	LTJ550HJ06-V
SMPS	Vendor	DONGYANG	DONGYANG	HANSOL
	CODE	BN44-00427B	BN44-00427B	BN44-00428B
	SPEC	BN44-00427B	BN44-00427B	BN44-00428B
Main Assy	Chassis Ass'y	BN91-06484G	BN91-06484H	BN91-06484J
	PBA Ass'y code	BN94-04359G	BN94-04359H	BN94-04359J
1	Factory Reset	-	-	-
2	Type	40P1UF6E	46P1UF6E	55A1UF6E
3	Local set	US	US	US
4	Model	D6420	D6420	D6420
5	Tuner	SEC_Si2173	SEC_Si2173	SEC_Si2173
6	DDR	-	-	-
7	Light Effect	OFF	OFF	OFF
8	Ch Table	NONE	NONE	NONE
9	Country	-	-	-
10	Front Color	U-T-BL-M	U-T-BL-M	U-T-BL-M

2-1-3. UD6450

Model Name		UN40D6450UF	UN46D6450UF	UN55D6450UF
Panel	Vendor	CMI	CMI	AML
	CODE	BN07-00997A	BN07-00998A	BN95-00451A
	SPEC	LD400CSC-C1	LD460CSC-C1	LTJ550HJ06-V
SMPS	Vendor	DONGYANG	DONGYANG	HANSOL
	CODE	BN44-00427B	BN44-00427B	BN44-00428B
	SPEC	BN44-00427B	BN44-00427B	BN44-00428B
Main Assy	Chassis Ass'y	BN91-06484D	BN91-06484E	BN91-06484F
	PBA Ass'y code	BN94-04359D	BN94-04359E	BN94-04359F
1	Factory Reset	-	-	-
2	Type	40P1UF6E	46P1UF6E	55A1UF6E
3	Local set	US	US	US
4	Model	D6450	D6450	D6450
5	Tuner	SEC_Si2173	SEC_Si2173	SEC_Si2173
6	DDR	-	-	-
7	Light Effect	OFF	OFF	OFF
8	Ch Table	NONE	NONE	NONE
9	Country	-	-	-
10	Front Color	U-T-BK-M	U-T-BK-M	U-T-BK-M

2-2-4. UD6500

Model Name		UN32D6500VF	UN40D6500VF	UN46D6500VF	UN55D6500VF
Panel	Vendor	CMI	CMI	CMI	AML
	CODE	BN07-00996A	BN07-00997A	BN07-00998A	BN95-00451A
	SPEC	LD320CSC-C1	LD400CSC-C1	LD460CSC-C1	LTJ550HJ06-V
SMPS	Vendor	SEC	DONGYANG	DONGYANG	HANSOL
	CODE	BN44-00458A	BN44-00427B	BN44-00427B	BN44-00428B
	SPEC	BN44-00458A	BN44-00427B	BN44-00427B	BN44-00428B
Main Assy	Chassis Ass'y	BN91-06483D	BN91-06483C	BN91-06483A	BN91-06483B
	PBA Ass'y code	BN94-04357D	BN94-04357C	BN94-04357A	BN94-04357B
1	Factory Reset	-	-	-	-
2	Type	32D1UF3E	40P1UF6E	46P1UF6E	55A1UF6E
3	Local set	US	US	US	US
4	Model	D6500	D6500	D6500	D6500
5	Tuner	SEC_Si2173	SEC_Si2173	SEC_Si2173	SEC_Si2173
6	DDR	-	-	-	-
7	Light Effect	OFF	OFF	OFF	OFF
8	Ch Table	NONE	NONE	NONE	NONE
9	Country	-	-	-	-
10	Front Color	U-T-BL-M	U-T-BL-M	U-T-BL-M	U-T-BL-M

2-2-5. UD6900

Model Name		UN46D6900WF	UN55D6900WF
Panel	Vendor	CMI	AML
	CODE	BN07-00998A	BN95-00451A
	SPEC	LD460CSC-C1	LTJ550HJ06-V
SMPS	Vendor	DONGYANG	HANSOL
	CODE	BN44-00427B	BN44-00428B
	SPEC	BN44-00427B	BN44-00428B
Main Assy	Chassis Ass'y	BN91-06907A	BN91-06907B
	PBA Ass'y code	BN94-04629A	BN94-04629B
1	Factory Reset	-	-
2	Type	46P1UF6E	55A1UF6E
3	Local set	US	US
4	Model	D6900	D6900
5	Tuner	SEC_Si2173	SEC_Si2173
6	DDR	-	-
7	Light Effect	OFF	OFF
8	Ch Table	NONE	NONE
9	Country	-	-
10	Front Color	U-T-CL-M	U-T-CL-M

2-3. New Functions Explanation

2-3-1. Auto Motion Plus 120Hz

■ Function Naming

- 120Hz FRC + MJC : Auto Motion Plus 120Hz

■ Detail specifications

Function (OSD)	120Hz FRC	Judder reduction (only 24p source)	Blur reduction
Off	Off (repeat)	Off	Off
Clear	ON (interpolation)	Off	High
Standard	ON (interpolation)	Medium	Medium
Smooth	ON (interpolation)	High	High
Custom	Level variable (0~10)		
Demo	Demo (Standard/off)		

■ 120Hz Motion Enhancement



Off



Low / Medium / High



Demo

2-3-2. Media Play

■ Media Play

01. Functions that are not supported when connecting to a PC through a network:

- Sorting files by preference in the Photos, Music, and Videos folders.
- The ⏮ (REW) or ⏭ (FF) button while a movie is playing.
- Divx DRM, Multi-audio, embedded captions are not supported.

02. When you use Media Play mode through a network connection, depending on the functions of the provided server

- The sorting method may vary.
- The scene search function may not be supported.
- The Play Continuously function, which resumes playing of a video, may not be supported.
- The Play Continuously function does not support multiple users. (It will have only memorized the point where the most recent user stopped playing.)
- The ◀ or ▶ buttons may not work depending on the content information.
- If you experience any file stuttering issue while playing a video over a wireless network, we recommend using a wired network."

● Supported Subtitle Formats

Name	File extension	Format
MPEG-4 time-based text	.txt	XML
SAMI	.smi	HTML
SubRip	.srt	string-based
SubViewer	.sub	string-based
Micro DVD	.sub or .txt	string-based

● Supported Video Formats

File Extension	Container	Video Codec	Resolution	Frame rate (fps)	Bit rate (Mbps)	Audio Codec
*.avi *.mkv	AVI MKV	Divx 3.11/4.x/5.1/6.0	1920 x 1080	6 ~ 30	8	MP3/AC3 /LPCM /ADPCM /DTS Core
		XviD	1920 x 1080	6 ~ 30	8	
		H.264 BP/MP/HP	1920 x 1080	6 ~ 30	25	
		MPEG4 SP/ASP	1920 x 1080	6 ~ 30	8	
		Motion JPEG	1920 x 1080	6 ~ 30	8	
*.asf	ASF	Divx 3.11/4.x/5.1/6.0	1920 x 1080	6 ~ 30	8	MP3/AC3 /LPCM /ADPCM /WMA
		XviD	1920 x 1080	6 ~ 30	8	
		H.264 BP/MP/HP	1920 x 1080	6 ~ 30	25	
		MPEG4 SP/ASP	1920 x 1080	6 ~ 30	8	
		Motion JPEG	1920 x 1080	6 ~ 30	8	
*.wmv	ASF	Window Media Video v9	1920 x 1080	6 ~ 30	25	WMA
*.mp4	MP4	H.264 BP/MP/HP	1920 x 1080	6 ~ 30	25	MP3/ADPCM /AAC
		MPEG4 SP/ASP	1920 x 1080	6 ~ 30	8	
		XVID	1920 x 1080	6 ~ 30	8	
*.3gp	3GPP	H.264 BP/MP/HP	1920 x 1080	6 ~ 30	25	ADPCM / AAC
		MPEG4 SP/ASP	1920 x 1080	6 ~ 30	8	
*.vro *.vob	VRO VOB	MPEG2	1920 x 1080	24/25/30	30	AC3/MPEG /LPCM
		MPEG1	352 x 288	24/25/30	30	
*.mpg *.mpeg	PS	MPEG1	352 x 288	24/25/30	30	AC3/MPEG /LPCM/AAC
		MPEG2	1920 x 1080	24/25/30	30	
		H.264	1920 x 1080	6 ~ 30	25	
*.ts *.tp *.trp	TS	MPEG2	1920 x 1080	24/25/30	30	AC3/AAC /MP3/DD+ /HE-AAC
		H.264	1920 x 1080	6 ~ 30	25	
		VC1	1920 x 1080	6 ~ 30	25	

03. Other Restrictions

NOTE


- If there are problems with the contents of a codec, the codec will not be supported.
- If the information for a Container is incorrect and the file is in error, the Container will not be able to play correctly.
- Sound or video may not work if the contents have a standard bit rate/frame rate above the compatible Frame/sec listed in the table above.

Video Decoder	Audio Decoder
<ul style="list-style-type: none">• Supports up to H.264, Level 4.1• H.264 FMO / ASO / RS, VC1 SP / MP / AP L4 and AVCHD are not supported.• XVID, MPEG4 SP, ASP:<ul style="list-style-type: none">– Below 1280 x 720: 60 frame max– Above 1280 x 720: 30 frame max• GMC is not support.	<ul style="list-style-type: none">• Supports up to WMA 7, 8, 9, STD, 9 PRO• WMA 9 PRO is not supported the 2 channel excess multi channel or the lossless audio• WMA sampling rate 22050Hz mono is not supported. ReadAudio 10 lossless is not supported

2-3-3. AllShare

■ About AllShare™

AllShare™ connects your TV and compatible Samsung mobile phones/ devices through a network. On your TV, you can view call arrivals and SMS messages, and received by your mobile phones. In addition, you can play media contents including videos, photos, and music saved on your mobile phones or the other devices (such as your PC) by controlling them on the TV via the network. Additionally, you can use your TV for browsing web pages on your mobile phones.

 For more information, visit “www.samsung.com” or contact the Samsung call center. Mobile devices may need additional software installation. For details, refer to each device's user's guide.

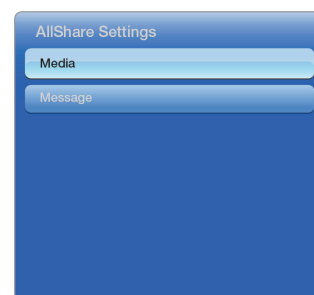
■ Setting Up AllShare™

 **MENU** → **Network** → **AllShare Settings** → **ENTER** 

01. AllShare Settings

Media (On / Off) : Enables or disables the media function. When the media function is on, you can control Media contents play using mobile phones or other devices that support DLNA DMC.

Message (On / Off) : Enables or disables the message function. (for call arrivals, and SMS messages received by your mobile phones)




02. Media / Message

Shows a list of mobile phones or connected devices which have been set up to use the Media or Message function with this TV.

 The Media function is available in all devices which support DLNA DMC.

- **Allowed / Denied** : Allows/Blocks the devices.
- **Delete** : Deletes the devices from the list.

 This function only deletes the name of the device from the list. If the deleted device is turned on or tries to connect to the TV, it may appear on the list again.

03. Using the Message Function

You can view call arrivals and SMS messages received by your mobile mobile phone, through the alarm window, while watching TV.

 **NOTE**

- To disable the alarm window, set **Message** to **Off** in the **AllShare Settings**.
- Whether **OK** is selected or not selected after a message has appeared once, the message will be deleted from the alarm window.
- When a message from an unknown mobile phone is displayed, select the mobile phone in the **Message** menu in **AllShare Settings**, and then select **Denied** to block the phone.

Message View

If a new SMS message arrives while you are watching TV, the alarm window appears. If you select **OK**, the contents of the message are displayed.

 You can configure the viewing settings for SMS messages on your mobile phones. For the procedures, refer to the mobile phone manual.

 Some types of characters may be displayed as blank or broken characters.

Call Arrival Alarm

If a call arrives while you are watching TV, the alarm window appears.

Schedule Alarm

You can view scheduled events in the alarm window while you are watching TV.



 You can configure viewing settings for scheduled contents on your mobile phones. For the procedures, refer to the mobile phone manual.

 Some special characters may be displayed as blank or broken characters.

04. Using the Media Function

An alarm window appears informing you that media contents (videos, photos, music) sent from a mobile phone will be displayed on your TV. The contents are played automatically 3 seconds after the alarm window appears. If you press the **RETURN** or **EXIT** button when the alarm window appears, the media contents are not played.

NOTE

- The first time a device accesses your TV through the media function, a warning popup window appears. Press the **ENTER**  button to select Allow. This permits the phone to access the TV freely and use the Media function to play content.
- To turn off media contents transmissions from a mobile phone, set **Media** to **Off** in the **AllShare Settings**.
- Contents may not play on your TV depending on their resolution and format.
- The **ENTER**  and **◀ ▶** buttons may not work depending on the type of media content.
- Using the mobile device, you can control the media play. For details, refer to each mobile's user's guide.

■ AllShare™ setup and checklists

Problem	Possible Solution
Deleted mobile phone list showing up again.	<ul style="list-style-type: none"> [Menu > Application > Content View > AllShare™ > Message] Where need to block the added mobile phone or device again. Because deleted device would be added again if that device turns on or attempt to approach.
Want to turn off the function of receiving message from the mobile phone.	<ul style="list-style-type: none"> One of the setup lists of AllShare™, you need to turn 'Message' list to 'Off'.
Want to turn off the function of receiving Media from mobile phone or home network devices on TV.	<ul style="list-style-type: none"> One of the setup lists of AllShare™, you need to turn 'Media' list to 'Off'.
Want to add deleted mobile phone or home network devices again.	<ul style="list-style-type: none"> Power on the deleted mobile phone or home network devices. Set up the network and activate the home network function, check the connection at AllShare™.
Several same names of TV shows up on mobile phone.	<ul style="list-style-type: none"> At AllShare™ set up menu, change the name of the TV.
Messages/schedules/notifications from unknown mobile phone show up on TV.	<ul style="list-style-type: none"> [Menu > Application > Content View > AllShare™ > Message] Where You can block the unknown mobile phone.
SMS message notification shows up in small window.	<ul style="list-style-type: none"> Besides watching TV, If some other function is activating, SMS message will show up in small icon. You need to finish the function and exit to Watching TV mode in order to display SMS message in large window.
Received SMS message is not showing up on TV.	<ul style="list-style-type: none"> Check if TV's network setup is all right according to setup guide. Check if mobile phone's network (Wi-Fi) is activated. Among the AllShare™ setup lists, check if the Message is 'on'. Check if the mobile phone number is showing up on AllShare™ message list. Check if the TV's showing up on mobile phone's setup lists.
Contents that play on mobile phone doesn't play on TV.	<ul style="list-style-type: none"> Contents formats play on TV is exactly same as Media Play format. That means some contents may not play according to its resolution and format
Suddenly TV display is changed, unwanted movie/picture/music is playing	<ul style="list-style-type: none"> Before the device play, Block the device at AllShare™ media list. Or press 'return' or 'exit' button of remote controller so that the device may not play.
The name of the TV is not appearing while try to play media on mobile phone.	<ul style="list-style-type: none"> Check the network of TV. Activate the network (Wi-Fi) of mobile phone and connect to home network. Check if the setup list of media on AllShare™ is 'on'. Check if mobile phone is blocked on media list. If blocked, change it to permission.
Movie is not playing or disconnected.	<ul style="list-style-type: none"> High resolution of Movie may not play when Wi-Fi network is not in good condition.

2-3-4. Full Browser

■ Concepts and Features

Full Browser ?

Using this App., you can contact the web site and contents just like web browser of PC.



1 Favorite

- Show the list of sites that user frequently accessed.(text list or thumbnail)
- User can export and import favorites list using USB.

2 History

- Show and record the list of the sites that user had accessed.

3 Window list

- It can show the 6 windows to the max.
- User can select window list to see the windows that opened.

4 Zooming

- User can zoom in/out the windows.

5 Tab mode

- User can focus data that linked using 4 direction button on internet websites.

6 Pointer mode

- If User select yellow color key on Tab mode, Change to pointer mode.
- User can select and control data that can not be selected on Tab mode(ex. Volume button on Flash contents) using pointer that control by 4 direct button.

7 Reading tools

- If user has a hard time reading because of small font size or advertisement, select the reading tool to display only text and image.

8 Clean site

- Users can access only to websites set as "Clean Site" for safety. (ex. children care)
This function can be set through the below path.
"Option" → "Setting" → Select "Clean site" When users try to first access, the password is "0000".

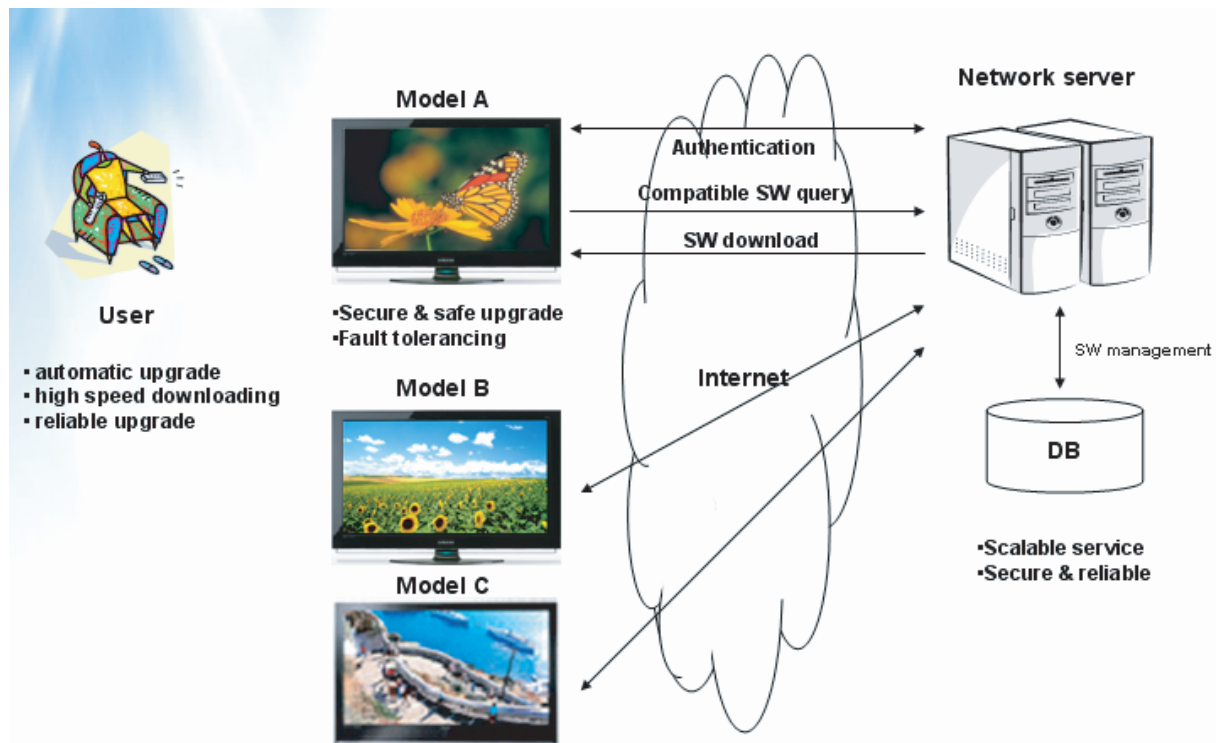
9 Private Browsing

- This function can be set through the below path.
"Option" → "Setting" → Select "Private Browsing".
After setting this function, all accessing sites will be stored in the user's web history.

2-3-5. OTN Over The Network

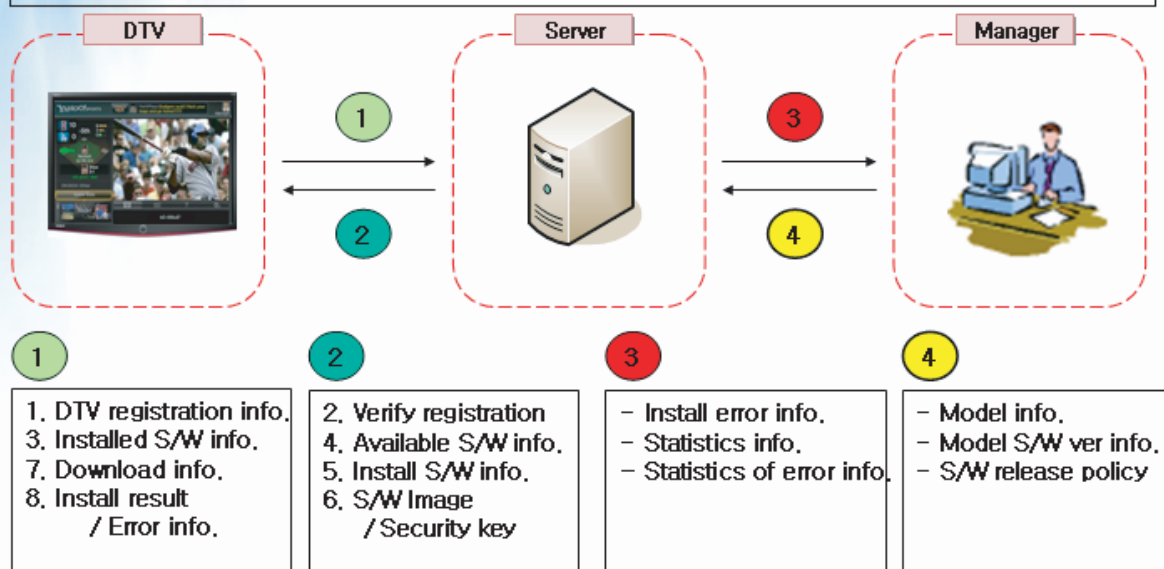
Over The Network : It is available that update to latest version by network.

1. Overview of OTN



■ Purpose of OTN

because of variable contents and devices, TV software will be more and more complicate. So it is necessary that TV software is updated real time.



2-3-6. 3D Display

■ What is 3D Display?


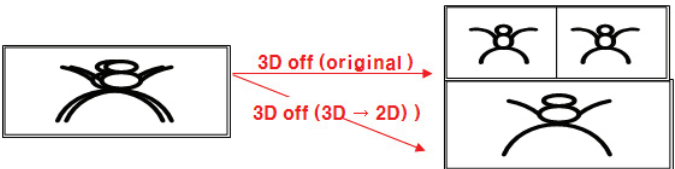
- A system that display 3D images artificially
- How ? → Using binocular time delay
 - ① Left eye recognizes left image, right eye recognizes right image.
 - ② Human eyes be far away each other 65mm horizontally.
So each eye feels a little bit of time delay of left and right information.
Human brain merges those images and can feel three-dimensional.

Side by side ◀



■ 3D OSD terms

3D Format : There are several 3D formats existing on how to merge Left and Right images.

Format	Input images	explanation	Input source	notes
Frame Packing		<ul style="list-style-type: none"> • Inserting Blink Active Space between Left and Right images. * Full resolution : 1920 x 1080 x 2 (Left and Right each) + Blink = 1920 x 2205 	HDMI 1.4	1. HDMI 1.4 standard format 2. Automatically activating (Not in the menu or UI) 3. BD format
Top & Bottom		<ul style="list-style-type: none"> • In 1 frame, Left image on the upper half, Right image on the bottom half. * Vertically half resolution 	HDMI, USB, DTV(VOD), PC	3D Broadcasting Format
Side by Side		<ul style="list-style-type: none"> • In 1 frame, Left image on the left half, Right image on the right half. * Horizontally half resolution 	HDMI, USB, DTV(VOD), PC	3D Broadcasting Format
Line by Line		<ul style="list-style-type: none"> • In 1 frame, every horizontal line, Left and Right image in turn. * Vertically half resolution 	PC	1. MPEG encoding impossible 2. Only in PC
Vertical Stripe		<ul style="list-style-type: none"> • In 1 frame, every vertical line, Left and Right image in turn. * Horizontally half resolution 	PC	1. MPEG encoding impossible 2. Only in PC
Checker Board		<ul style="list-style-type: none"> • In 1 frame, every pixel, Left and Right image in turn. * Half resolution both vertically and horizontally 	PC	1. MPEG encoding impossible 2. Only in PC
Frame Sequential		<ul style="list-style-type: none"> • Left And Right image in turn in every frame. • Full resolution spatially but Half resolution timely. 	PC	
2D → 3D	Extract Left and Right images artificially from normal 2D contents input and show it in 3D. (a function of TV)			
3D → 2D	When watching 3D TV (input is 3D source) , if a viewer feels tired of watching 3D TV, a viewer can change the TV into 2D. (In this case , TV only displays one of Left and Right images)			
Depth	Only activating in '2D → 3D Mode' Control the depth of 3D. 1~10 steps, Tiredness goes higher as depth goes higher.			
L/R correction	Switch the position of Left and Right images so that correspond with 3D glasses.			
3D Disable (3D off)	'3D off' has below meanings according to present modes . (1) In 2D → 3D Mode : coming back to 2D  (2) In 3D mode 			








■ 3D Supporting Formats

	DTV	Internet VOD	ATV/AV	Comp.	A.PC	HDMI	USB_PC	USB (Photo)	USB (Video)
Top-Bottom	Over 720P	All Resolution		Over 720P	-	Over 720P	Over 720P	All Resolution	All Resolution
Side by Side	Over 720P	All Resolution		Over 720P	-	Over 720P	Over 720P	All Resolution	All Resolution
Line by line	-	-			-	-	PC Resolution	-	-
Vertical Stripe	-	-			-	-	PC Resolution	-	-
Frame Seq.	-	-			-	-	PC Resolution	-	-
Checker BD	-	-			-	-	PC Resolution * 60Hz only	-	-
2D → 3D	All Resolution								
MPO	-	-	-	-	-	-	-	All Resolution	-
SAVE(SS.TB)	-	-	-	-	-	-	-	-	All Resolution
HDMI 1.4a	-	-	-	-	-	-	-	-	-
M2TS(3D)	-	-	-	-	-	-	-	-	All Resolution







- ■ : If the resolution is below 1920 x1080, PC Format(LL, VS, ChBD) and USB photo support only original size
- ■ : The edge of the Side by Side and Top-Bottom images are processed by Black (only component)
- USB photo : If the resolution is below 1920x1080, L/R images must be placed in the center of the screen

■ 3D Format Test

3D Format : There are several 3D formats existing on how to merge Left and Right images.



Format	Input images	Test Method
Frame Packing (HDMI 1.4)		<ul style="list-style-type: none"> • Able to test only by HDMI 1.4 BD Player or MSPG-4600MT(Master Device)
Top & Bottom		<ul style="list-style-type: none"> • Using Format_test.bmp - Check in the PC(HDMI) source. PC resolution and format resolution must be same - Wearing 3D glass, left eye sees only 'L' letter, right eye sees only 'R' letter (close your eyes one by one)
Side by Side		<ul style="list-style-type: none"> • Using Format_test.bmp - Check in the PC(HDMI) source. PC resolution and format resolution must be same - Wearing 3D glass, left eye sees only 'L' letter, right eye sees only 'R' letter (close your eyes one by one)
Line by Line		<ul style="list-style-type: none"> • Using Format_test.bmp - Check in the PC(HDMI) source. PC resolution and format resolution must be same - Wearing 3D glass, left eye sees only 'L' letter, right eye sees only 'R' letter (close your eyes one by one)
Vertical Stripe		<ul style="list-style-type: none"> • Using Format_test.bmp - Check in the PC(HDMI) source. PC resolution and format resolution must be same - Wearing 3D glass, left eye sees only 'L' letter, right eye sees only 'R' letter (close your eyes one by one)
Checker Board		<ul style="list-style-type: none"> • Using Format_test.bmp - Check in the PC(HDMI) source. PC resolution and format resolution must be same - Wearing 3D glass, left eye sees only 'L' letter, right eye sees only 'R' letter (close your eyes one by one)
Frame Sequential		<ul style="list-style-type: none"> • Using Frame Seq.avi - Check in the PC(HDMI) source. PC resolution and format resolution must be same - Wearing 3D glass, you only see one of the numbers(1 or 2) when closing one of the eye.
2D → 3D		<ul style="list-style-type: none"> • Check in the normal 2D source. Check not in the test pattern but in the actual video. * Left/Right black region will grow more and more as the depth goes higher.

■ Other 3D patterns

Checker Board		Frame Sequential	
Line by Line (Horizontal Stripe)		Side by Side	
Top & Bottom		Vertical Stripe	

2-3-7. QWERTY Remote

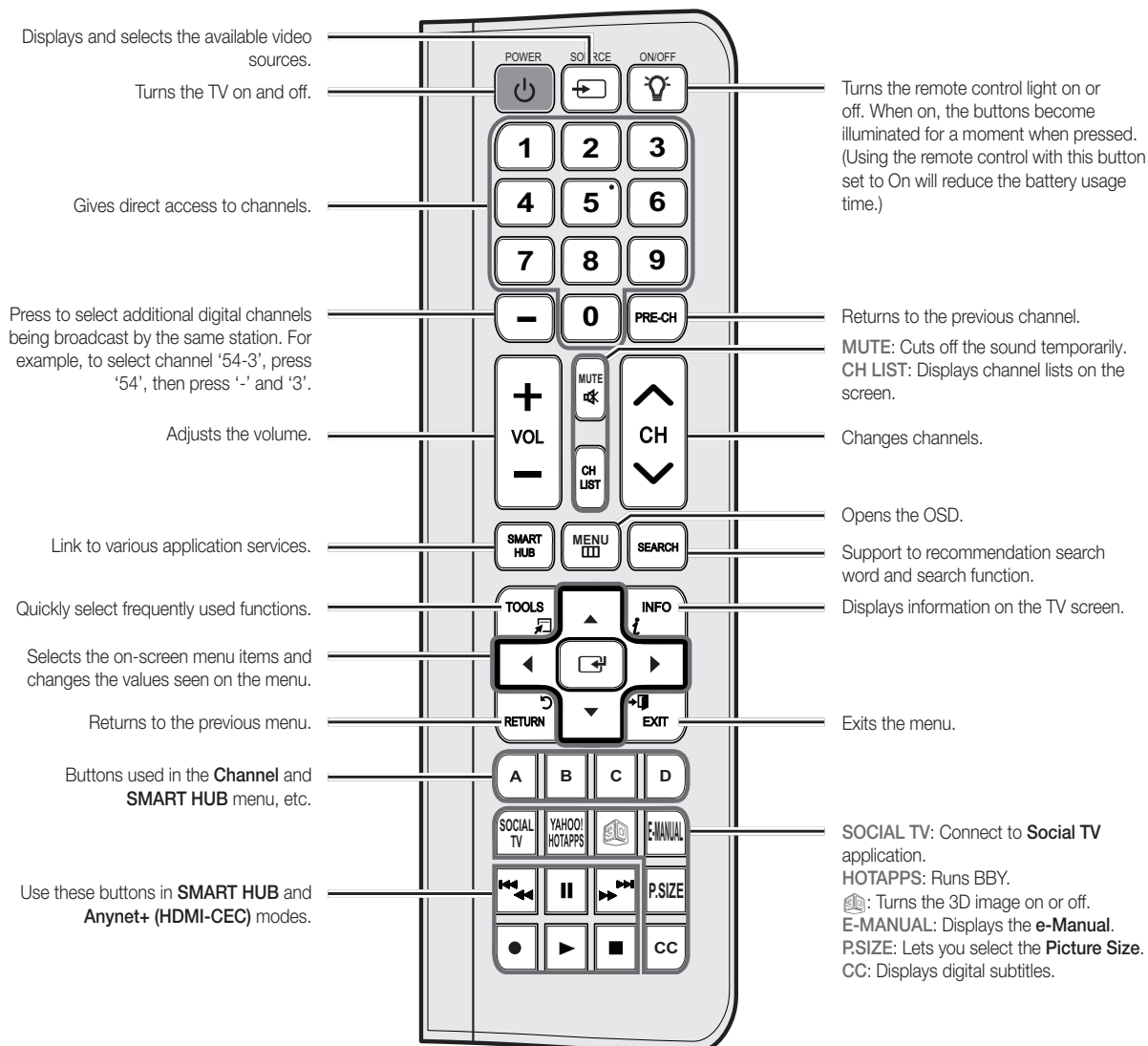
■ Specifications

Model Name	RMC-QTD1
Battery	AAA x 4 To extend the battery life, use of alkaline battery is recommended.
Demension (W x D x H)	2.4 x 1.0 x 6.0 inches (60.9 x 29.36 x 152.2 mm)
Weight	0.295 lbs (134g)
Front Image	Rear Image
	

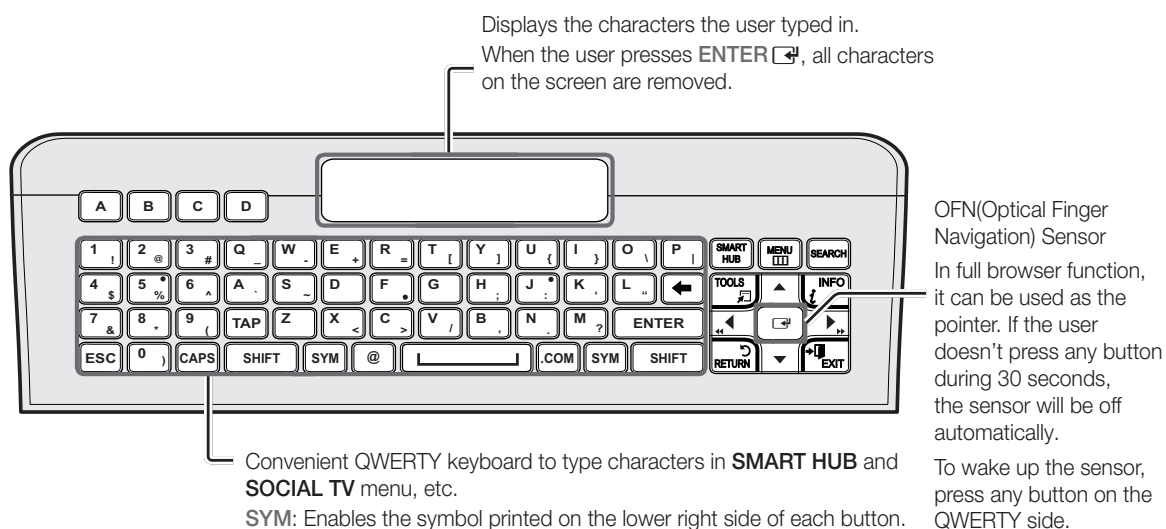
2. Product specifications

■ Key description

Remote Side View



QWERTY Side View

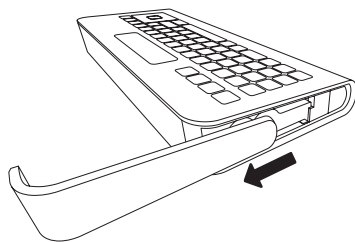


NOTE

The remote side doesn't work when the QWERTY side is up, and vice versa.

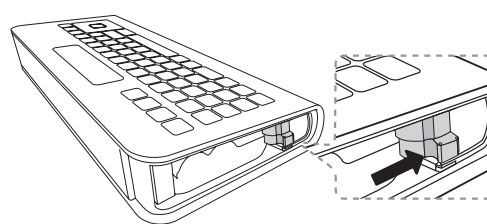
Inserting Batteries

1



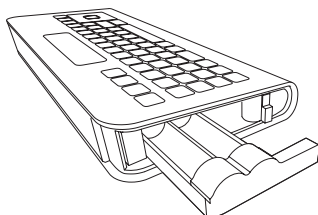
- Slide out the battery cover.

2



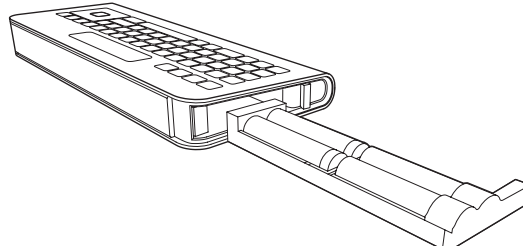
- Push the button right.

3




- Pull the battery tray out.

4




- Insert 4 AAA batteries in the tray, insert the battery tray into the QWERTY Remote and put the cover back on.

Initial Pairing

1. When the user inserts batteries into the QWERTY Remote, "NEED PAIRING PRESS SYM+TAB" will be displayed on the screen.
 2. Press **SYM** and **TAB** buttons at the same time more than 2 seconds.
-  A TV can be paired with only one QWERTY Remote.
When turn on the TV, start the pairing process about 30 seconds later.









To perform the pairing process again

1. If the QWERTY Remote have been paired before, press @ and ← on the QWERTY side more than 3 seconds.
"RESET OK" will be displayed on the LCD of QWERTY remote.
 2. Press **MUTE**, **0**, **MUTE** and **0** on the remote side of new QWERTY Remote facing the TV.
Press the buttons in 4 seconds, without waiting any OSD displayed on the TV.
 3. Follow the initial pairing process in 3 minutes.
-  If the initial pairing process doesn't finish in 3 minutes, perform the whole process again.

Caution

- **OFN**(Optical Finger Navigation) Sensor In full browser function, it can be used as the pointer.
- If the user doesn't press any button during 30 seconds, the sensor will be off automatically.
- To wake up the sensor, press any button on the QWERTY side.

2-4. Accessories

Product	Description	Code. No	Remark
	Remote Control & Batteries (AAA x 2)	AA59-00443A	Samsung Electronics Service center
	Power Cord	3903-000598	
	Warranty Card / Registration Card / Safety Guide Manual	BP68-00263E BN68-03330A AA68-03242L	
	Cleaning Cloth	BN63-01798B	
	Holder-Wire stand	BN61-05491A	
	Holder-Ring (4ea)	BN61-07295A	
	AV Gender	BN39-01154H	
	Component Gender	BN39-01154W	

4. Troubleshooting

4-1. Troubleshooting

1. Check the various cable connections first.
 - Check to see if there is a burnt or damaged cable.
 - Check to see if there is a disconnected or loose cable connection.
 - Check to see if the cables are connected according to the connection diagram.
2. Check the power input to the Main Board.
3. How to distinguish if the problem is caused by Main board or T-Con.
 - a. No Video : If the problem is No Video but BLU is on and Indication LED is blinking repeatedly and faster than normal booting, replace the T-Con board.
 - b. Distorted Picture : Check the inner patterns.
- For All mode

GenoaP	Napoli Pre	Napoli post	Piocture	Problem
OK	OK	OK	NG	Main board or Signal Source
NG	OK	OK	NG	Main board
NG	NG	NG	NG	Main or LVDS cable or T-con or Panel

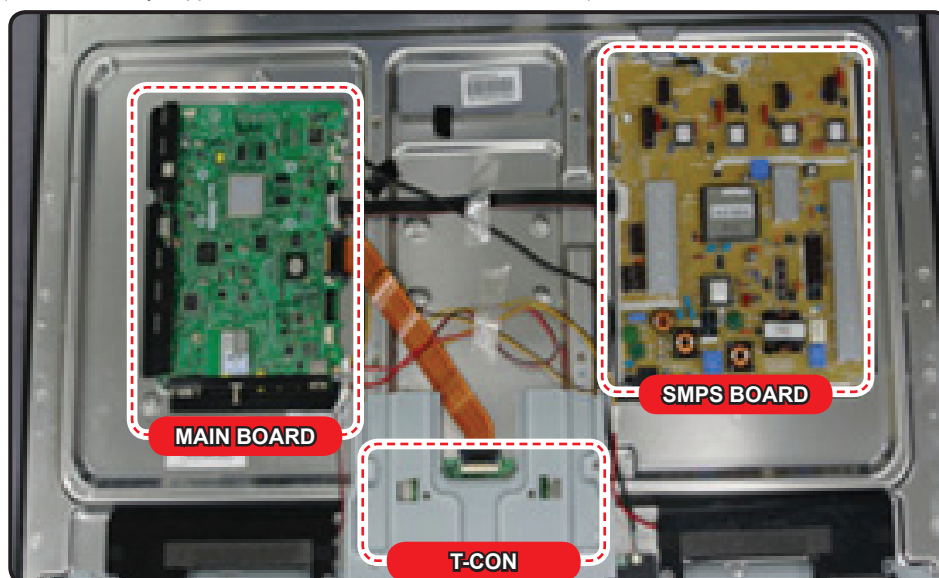
- Only for HDMI mode (additional check)

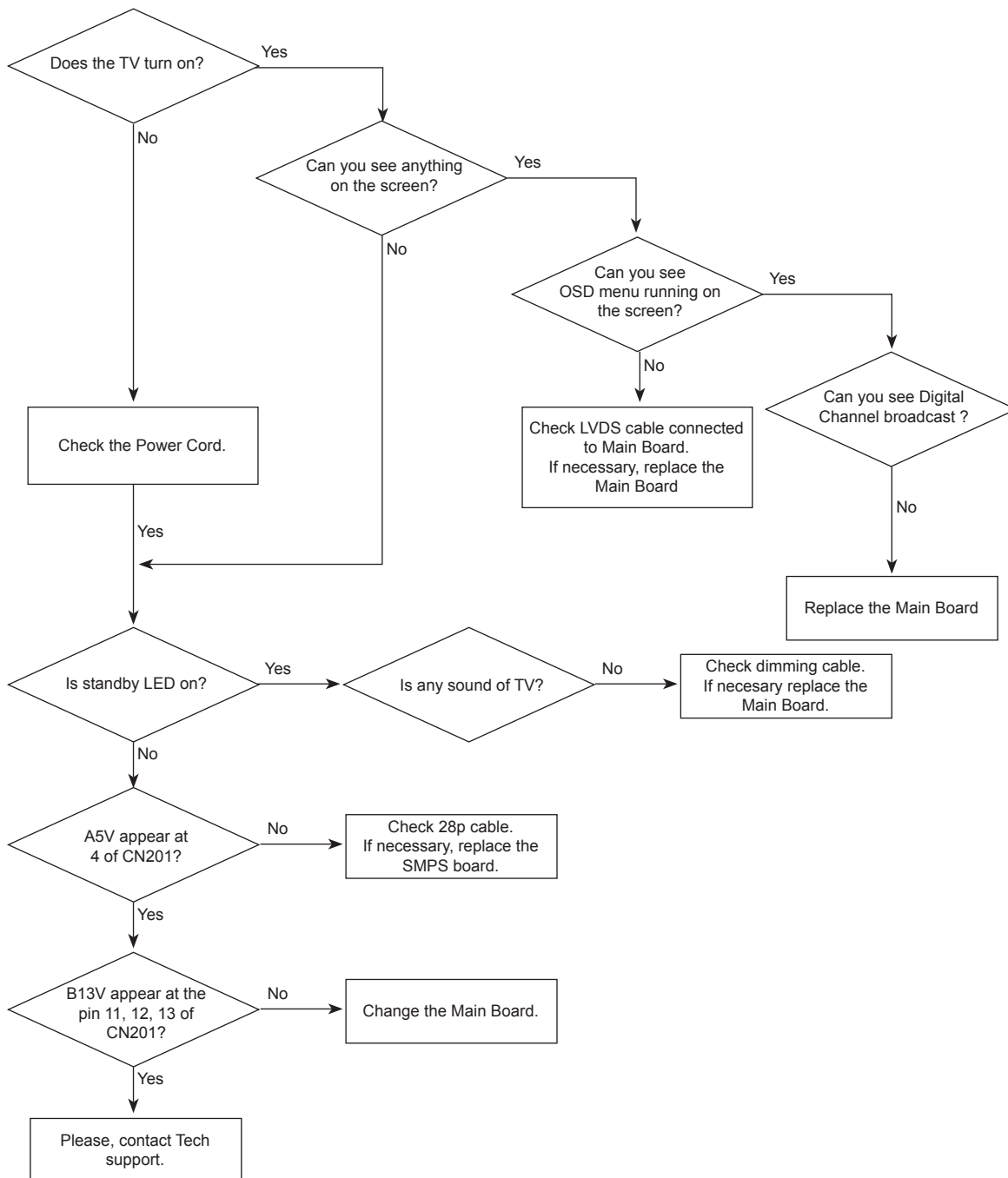
HDMI	Picture	Problem
OK	NG	There is no problems after HDMI IC check HDMI source or HDMI jack.
NG	NG	There is no problems before HDMI IC check GenoaS pattern or LVDS cable or T-con.

- **How to check inner pattern?**

1. Factory mode(**Mute** → **1** → **8** → **2** → **Power on** when TV is in '**Stand-by mode**')
 2. Move to SVC menu.
 3. Move to Test Pattern.
 4. Check inner patterns.

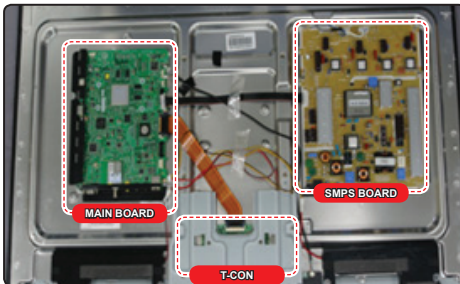
(This model only support GenoaS, GenoaS FRC POST, HDMI)



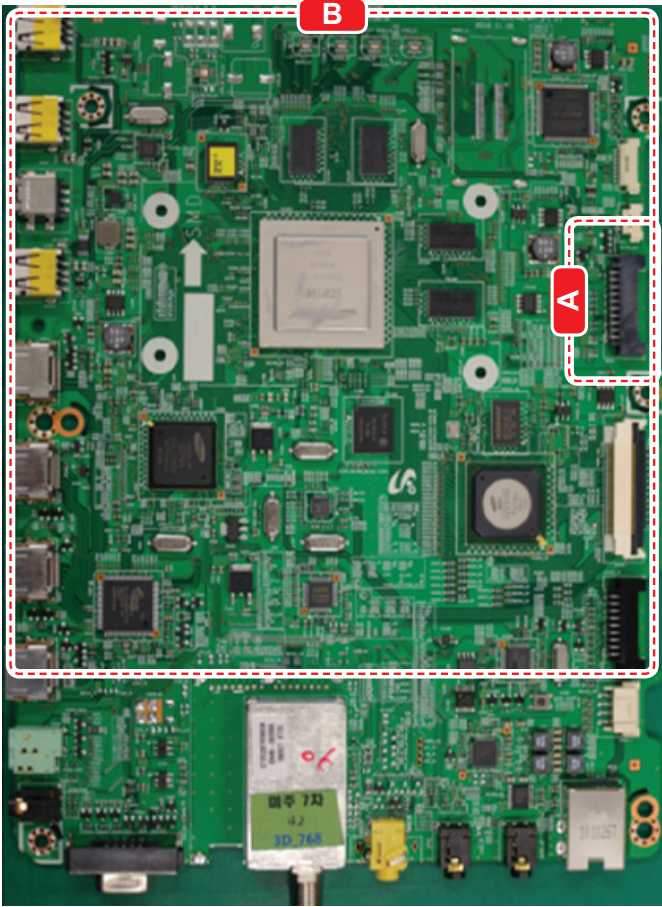
Simple flow chart of malfunction

4-1-1. No Power

☞ Refer to the next page to check the location such a CN201 or IC201 SVC Manual mentioned.

Symptom	<ul style="list-style-type: none"> - The LEDs on The front panel do not work when connecting The power cord. - The SMPS relay does not work when connecting The power cord. - The units appears to be dead.
Major checkpoints	<p>The IP relay or the LEDs on the front panel does not work when connecting the power cord if the cables are improperly connected or the Main Board or SMPS is not functioning. In this case, check the following:</p> <ul style="list-style-type: none"> - Check the internal cable connection status inside the unit. - Check the fuses of each part. - Check the output voltage of SMPS. - Replace the Main Board.
Diagnostics	 <pre> graph TD Q1[Power indicator LED is on?] -- No --> A1[Check a connetion power code.] Q1 -- Yes --> Q2[Check the backlight on, when 20p cable unconnected ?] Q2 -- No --> A2[Change 20p cable. Change Main Power Ass'y.] Q2 -- Yes --> Q3[Check 'Stand-By 5V' ? - BD203 : A5V] Q3 -- No --> A2 Q3 -- Yes --> Q4[Check 'Power input of Main Ass'y' ? - BD206 : B18VS - BD207/208/209 : B13V - BD201 : B5V] Q4 -- No --> A2 Q4 -- Yes --> Q5[Check 'Power IC output of Main Ass'y' ? L202 : B3.3V / L203 : B1.2V L204 : B1.1V / L201 : B1.5V IC203 : 3.3V / IC208 : 3.3V] Q5 -- No --> A3[Change the Main Ass'y.] Q5 -- Yes --> Q6[Check Input power of 'T-con b'd' ? - F11(T-CON) : B13V] Q6 -- No --> A4[Reconnect or Change. the LVDS cable.] Q6 -- Yes --> Q7[Check Power of 'T-con b'd' ? - L9(T-CON) : VCC12 - TP_VCC33 : VCC33] Q7 -- No --> A5[Change the T-con B'd.] Q7 -- Yes --> A6[Please, Contact tech support.] </pre>
Caution	Make sure to disconnect the power before working on the IP board.

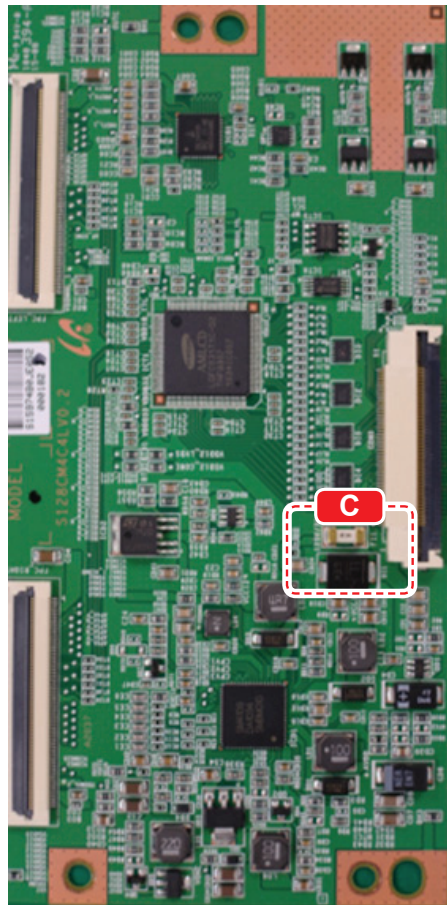
Location (Main)



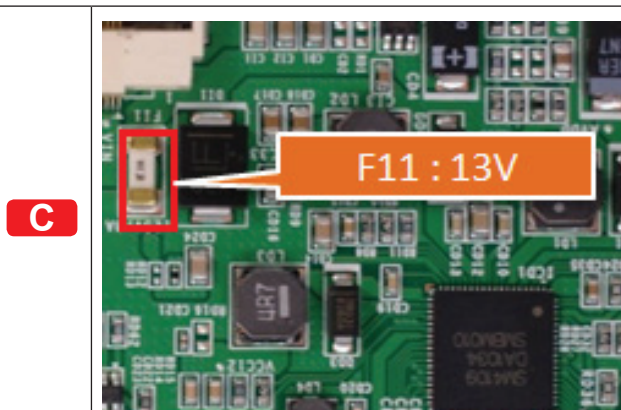
Detail

<div data-bbox="165 1554 236 1592">A</div> <div data-bbox="260 1312 786 1836"><p>BD207 : B13V BD208</p><p>BD206 :</p><p>BD206 : B5V</p><p>BD203 : A5V</p></div>	<div data-bbox="810 1554 880 1592">B</div> <div data-bbox="904 1236 1431 1908"><p>L202 : B3.3V</p><p>L204 : B1.1V</p><p>L201 : B1.5V</p><p>L203 : B1.2V</p><p>IC208 : 3.3V</p><p>IC203 : 3.3V</p></div>
--	--

Location (T-Con)

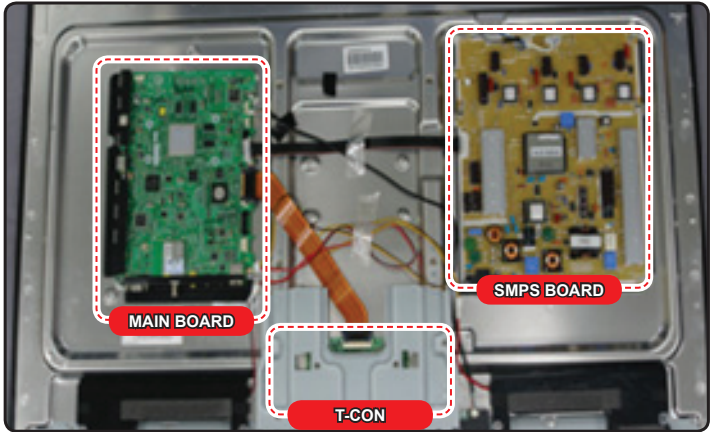


Detail

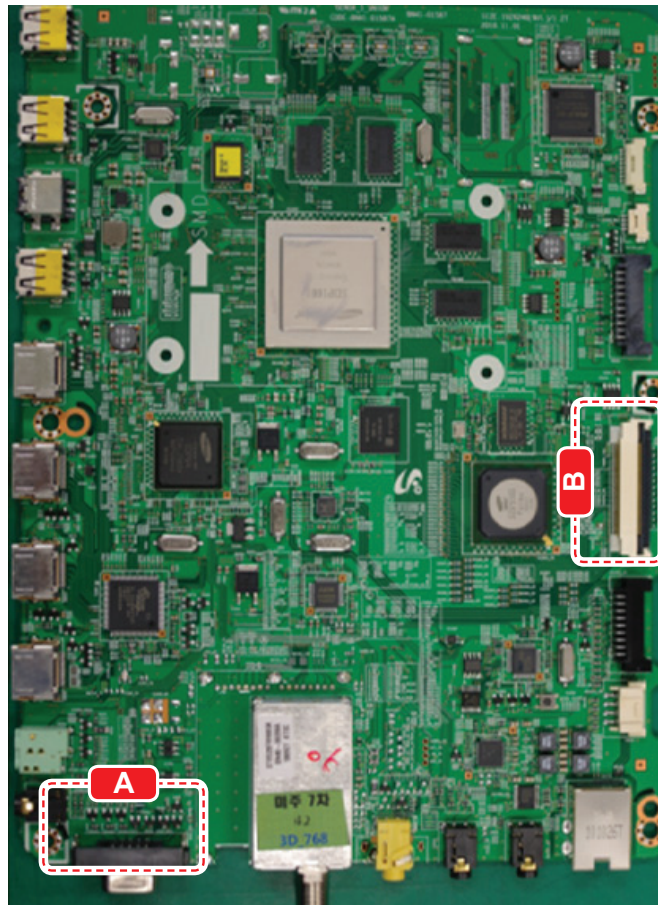


4-1-2. No Video (Analog PC signal)

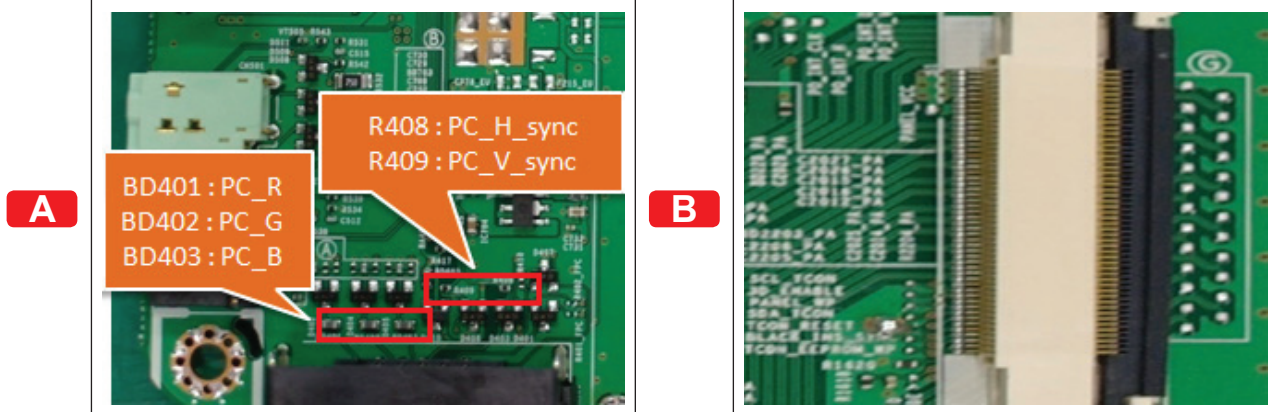
 Refer to the next page to check the location such a CN201 or IC201 SVC Manual mentioned.

Symptom	– Audio is normal but no picture is displayed on the screen.
Major checkpoints	<ul style="list-style-type: none"> – Check the PC source – Check the Genoa-P – This may happen when the LVDS cable connecting the Main Board and the Panel is disconnected.
Diagnostics	 <pre> graph TD Q1[Power indicator LED is off. Lamp(Backlight) on, no video ?] -- No --> A1[Check a set in the 'Stand-by mode' or 'DPMS mode'.] Q1 -- Yes --> Q2[Check the PC source and check the connection of D-SUB ?] Q2 -- No --> A2[Input the analog PC signal properly.] Q2 -- Yes --> Q3[Check the signal appear at input of IC901 ? PC_RED : BD401 PC_GREEN : BD402 PC_BLUE : BD403 PC_H_SYNK : R408 PC_V_SYNK : R409] Q3 -- No --> A3[Check CN401, PC cable. Change the Main Ass'y.] Q3 -- Yes --> Q4[Check the LVDS clk signal at output of Main board (TX) ? TX2_CLK : LV_TX2_DN/DP TX4_CLK : LV_TX4_DN/DP] Q4 -- No --> A4[Check IC1001 (GenoaS) and IC2001 (Parma). Change the Main Assy.] Q4 -- Yes --> Q5[Check the LVDS cable? Replace the LCD panel?] Q5 -- No --> A5[Please, contact Tech support.] </pre> <p>1 Check the signal appear at input of IC901 ? PC_RED : BD401 PC_GREEN : BD402 PC_BLUE : BD403 PC_H_SYNK : R408 PC_V_SYNK : R409</p> <p>2 Check the LVDS clk signal at output of Main board (TX) ? TX2_CLK : LV_TX2_DN/DP TX4_CLK : LV_TX4_DN/DP</p>
Caution	Make sure to disconnect the power before working on the IP board.

Location (Main)

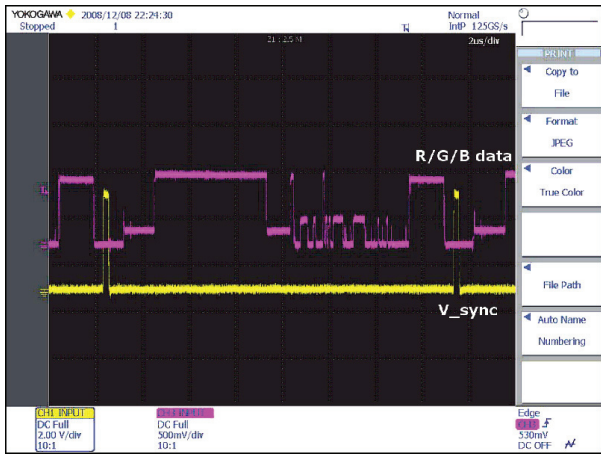
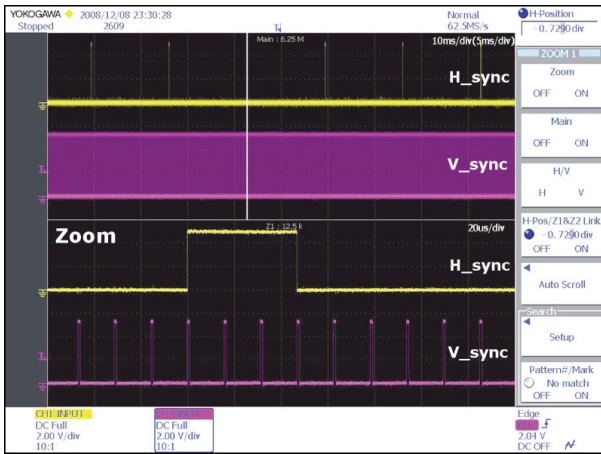


Detail

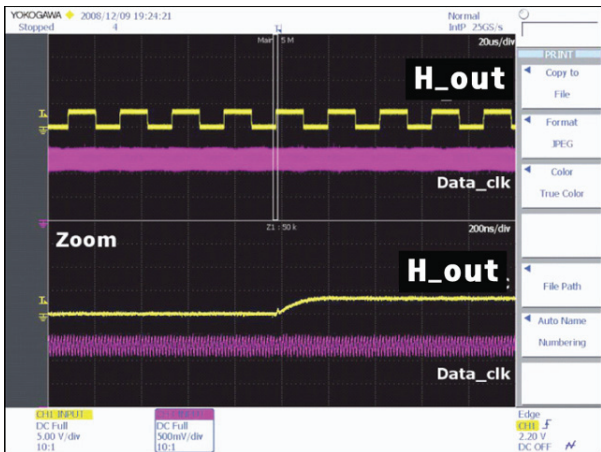


■ WAVEFORMS

① PC input (V-sink, H-sink, R/G/B)

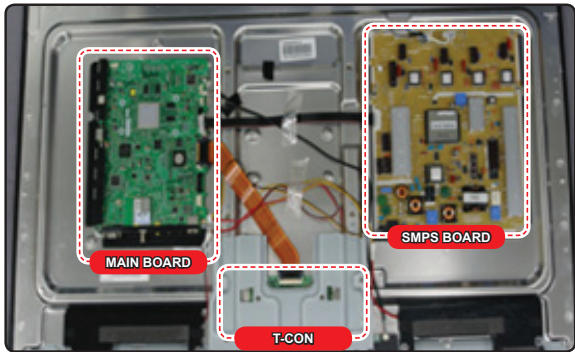


② LVDS output

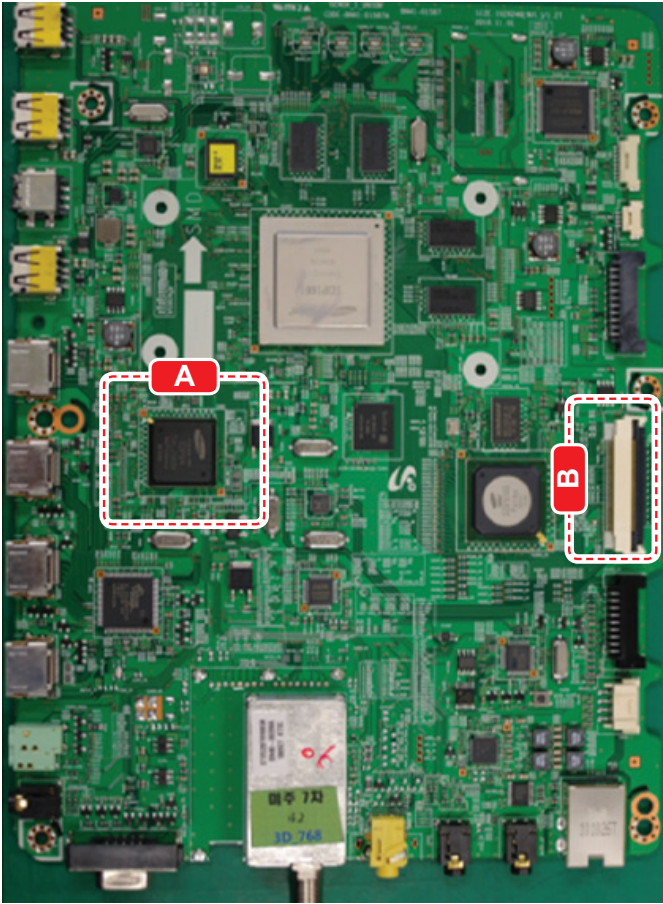


4-1-3. No Video (HDMI - Digital Signal)

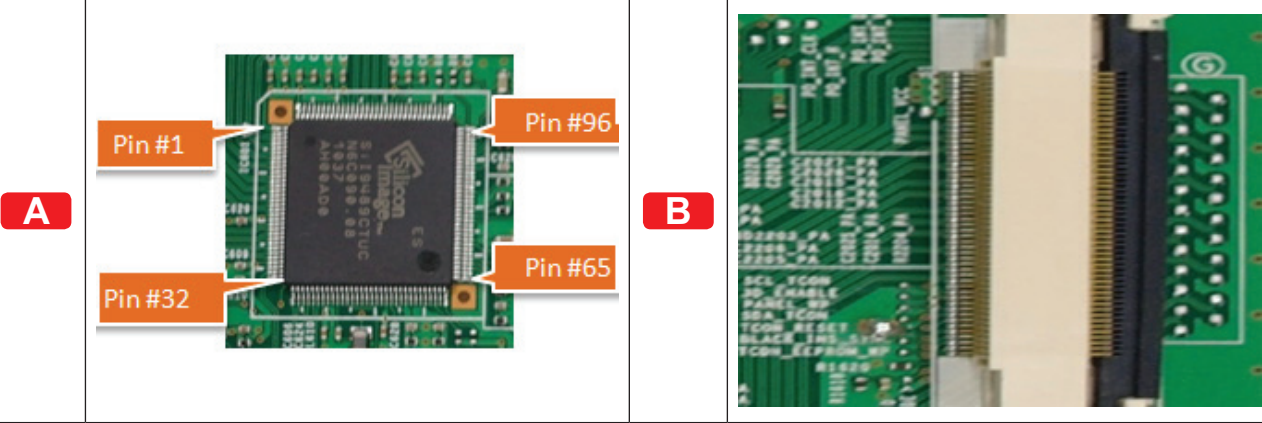
☑ Refer to the next page to check the location such a CN201 or IC201 SVC Manual mentioned.

Symptom	– Audio is normal but no picture is displayed on the screen.
Major checkpoints	<ul style="list-style-type: none"> – Check the HDMI source – Check the Valencia – This may happen when the LVDS cable connecting the Main Board and the Panel is disconnected.
Diagnostics	 <pre> graph TD Q1[Power indicator LED is off. Lamp(Backlight) on, no video ?] -- No --> A1[Check a set in the 'Stand-by mode'.] Q1 -- Yes --> Q2[Check the HDMI source and check the connection of HDMI cable ?] Q2 -- No --> A2[Input the HDMI signal properly.] Q2 -- Yes --> Q3[Check the signal at Input of Main board ? HDMI1 Clk : Pin #31,#32 of IC601 DATA : Pin #33~#38 of IC601 HDMI2 Clk : Pin #21,#22 of IC601 DATA : Pin #23~#28 of IC601 HDMI3 Clk : Pin #11,#12 of IC601 DATA : Pin #13~#18 of IC601 HDMI4 Clk : Pin #2,#3 of IC601 DATA : Pin #4~#9 of IC601] Q3 -- No --> A3[Check CN601~4. Check HDMI cable. Change the Main Assy.] Q3 -- Yes --> Q4[Check the signal at Output of 'HDMI switch IC' ? HDMI RX_Clk : Pin#116~117 of IC601 RX_Data : Pin#110~115 of IC601] Q4 -- No --> A4[Check IC601(HDMI switch). Change the Main Assy.] Q4 -- Yes --> Q5[Check the LVDS clk signal at output of Main board ? (TX) TX2_CLK : LV_TX2_DN/DP TX4_CLK : LV_TX4_DN/DP] Q5 -- No --> A5[Check IC1001(GenoaS) and IC2001(Parma). Change the Main Assy.] Q5 -- Yes --> Q6[Check the LVDS cable? Replace the T-con / LCD panel?] Q6 -- No --> A6[Please, Contact Tech support.] </pre> <p>1 Check the signal at Input of Main board ? HDMI1 Clk : Pin #31,#32 of IC601 DATA : Pin #33~#38 of IC601 HDMI2 Clk : Pin #21,#22 of IC601 DATA : Pin #23~#28 of IC601 HDMI3 Clk : Pin #11,#12 of IC601 DATA : Pin #13~#18 of IC601 HDMI4 Clk : Pin #2,#3 of IC601 DATA : Pin #4~#9 of IC601</p> <p>2 Check the signal at Output of 'HDMI switch IC' ? HDMI RX_Clk : Pin#116~117 of IC601 RX_Data : Pin#110~115 of IC601</p> <p>2 Check the LVDS clk signal at output of Main board ? (TX) TX2_CLK : LV_TX2_DN/DP TX4_CLK : LV_TX4_DN/DP</p>
Caution	Make sure to disconnect the power before working on the IP board.

Location (Main)

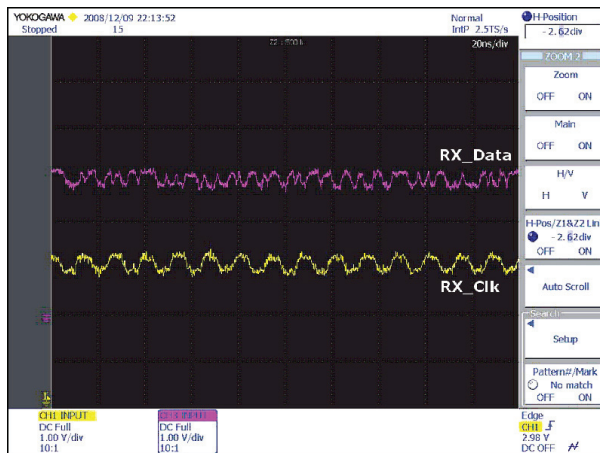


Detail

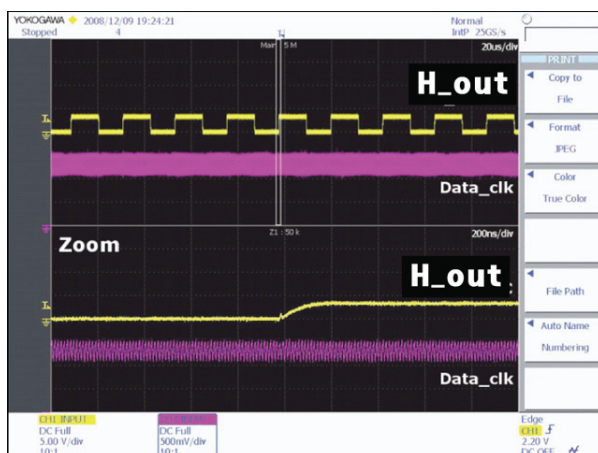


■ WAVEFORMS

① PC input (V-sink, H-sink, R/G/B)

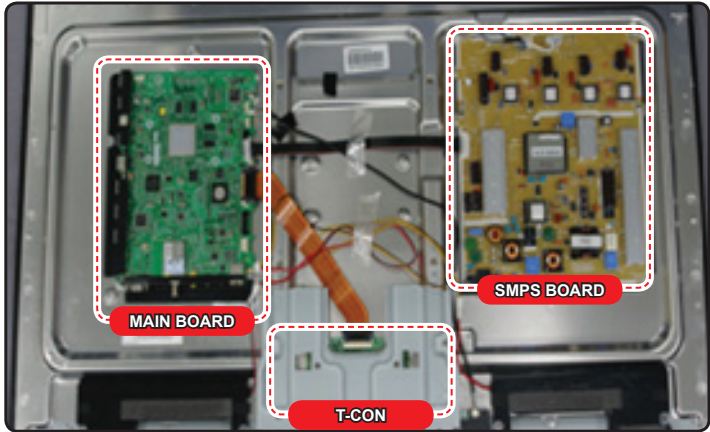


② LVDS output

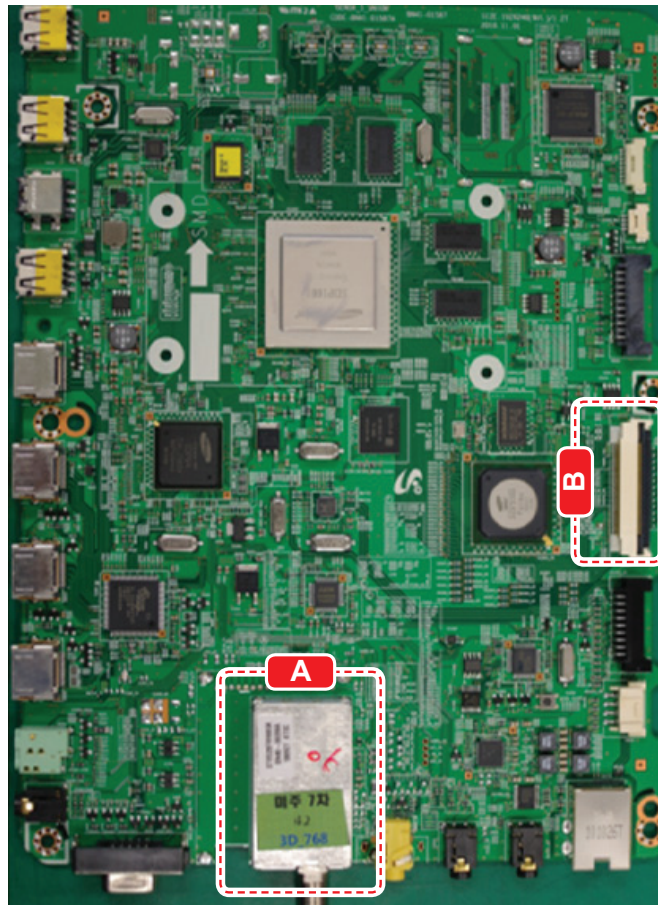


4-1-4. No Video (Tuner_CVBS)

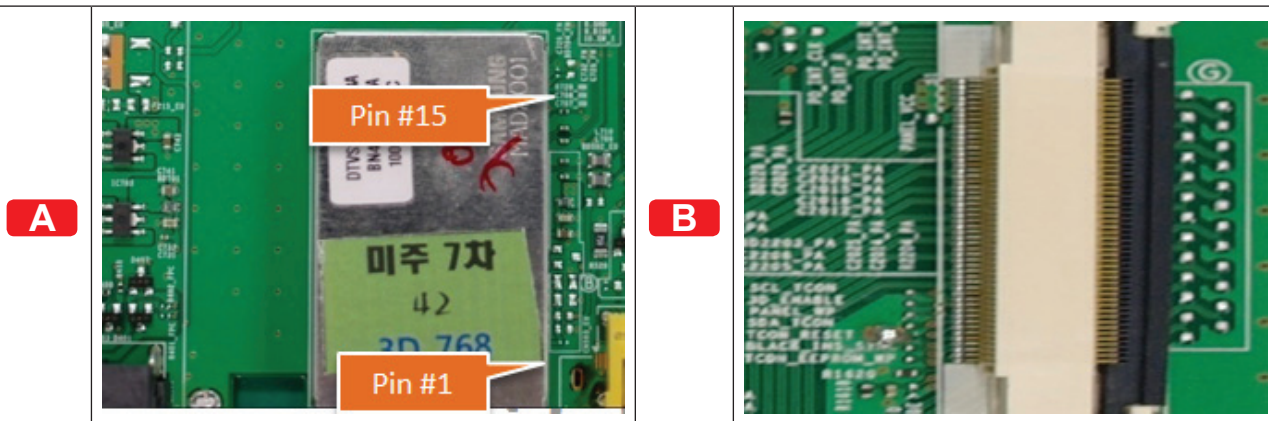
 Refer to the next page to check the location such a CN201 or IC201 SVC Manual mentioned.

Symptom	– Audio is normal but no picture is displayed on the screen.
Major checkpoints	<ul style="list-style-type: none"> – Check the Tuner CVBS source – Check the Genoa-P – This may happen when the LVDS cable connecting the Main Board and the Panel is disconnected.
Diagnostics	 <pre> graph TD Q1[Power indicator LED is off. Lamp(Backlight) on, no video ?] -- No --> A1[Check a set in the 'Stand-by mode'.] Q1 -- Yes --> Q2[Check the RF source and check the connection of RF cable ?] Q2 -- No --> A2[Input the RF source properly.] Q2 -- Yes --> Q3[1 Check the Power of Tuner ? Pin #4 of Tuner : B3.3V_Tuner Pin #2 of Tuner : B1.8V_Tuner] Q3 -- No --> A3[Change the Main Assy.] Q3 -- Yes --> Q4[2 Check the CVBS data out of IC901 ? C941 : Tuner CVBS] Q4 -- No --> A4[Check Tuner and IC801(Arsenal). Change the Main Assy.] Q4 -- Yes --> Q5[2 Check the LVDS clk signal at output of Main board ? (TX) TX2_CLK : LV_TX2_DN/DP TX4_CLK : LV_TX4_DN/DP] Q5 -- No --> A5[Check IC1001(GenoaS) and IC2001(Parma). Change the Main Assy.] Q5 -- Yes --> Q6[Check the LVDS cable? Replace the T-con / LCD panel?] Q6 -- No --> A6[Please, contact Tech support.] </pre>
Caution	Make sure to disconnect the power before working on the IP board.

Location (Main)

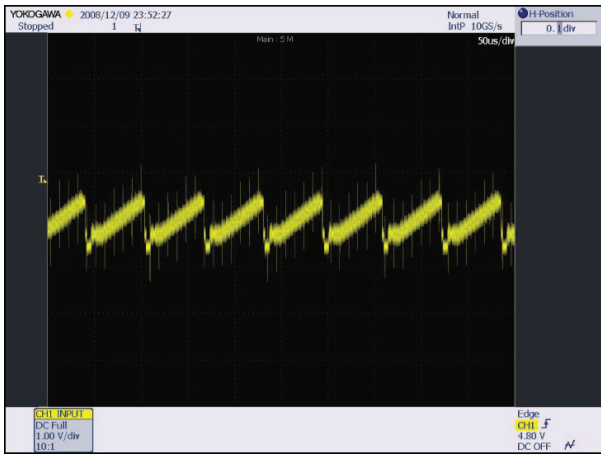


Detail

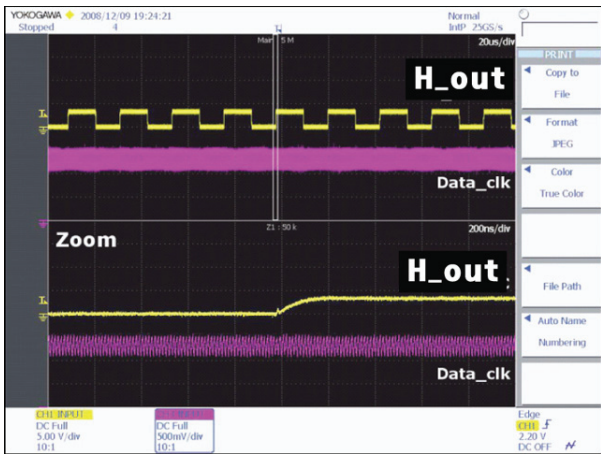


■ WAVEFORMS

① CVBS OUT (Grey Bar)

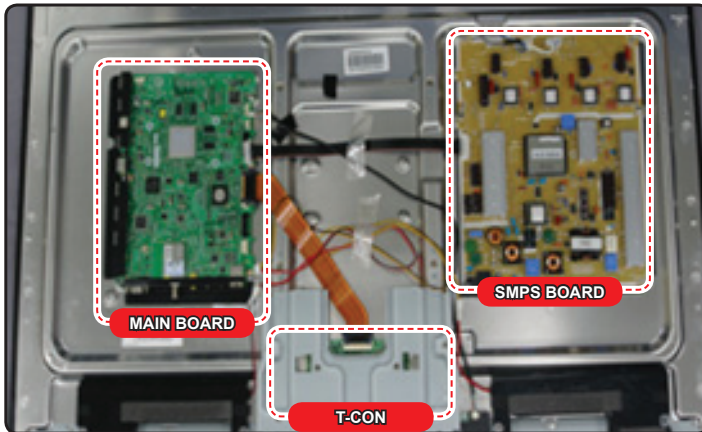


② LVDS output

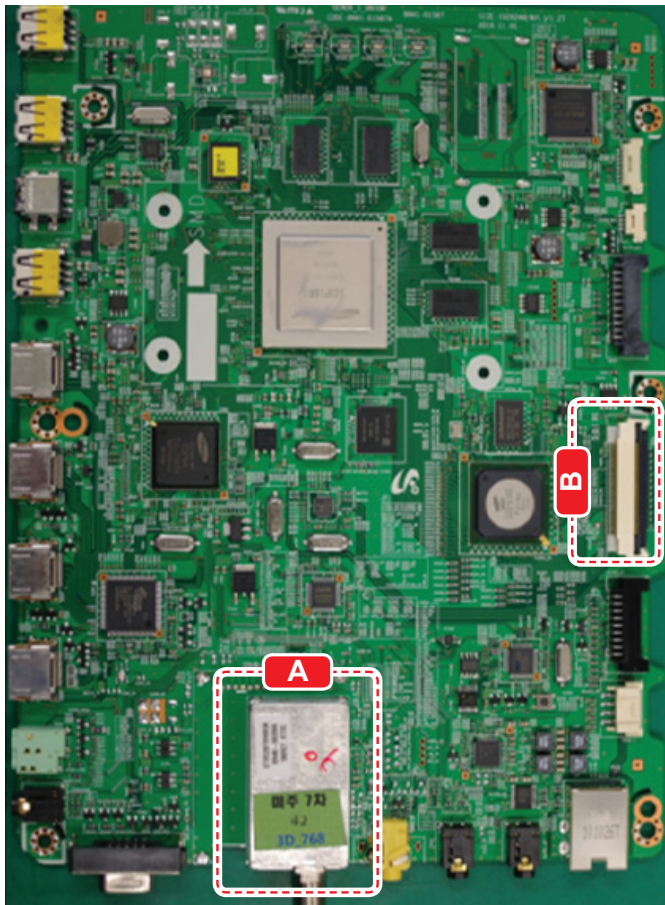


4-1-5. No Video (Tuner DTV)

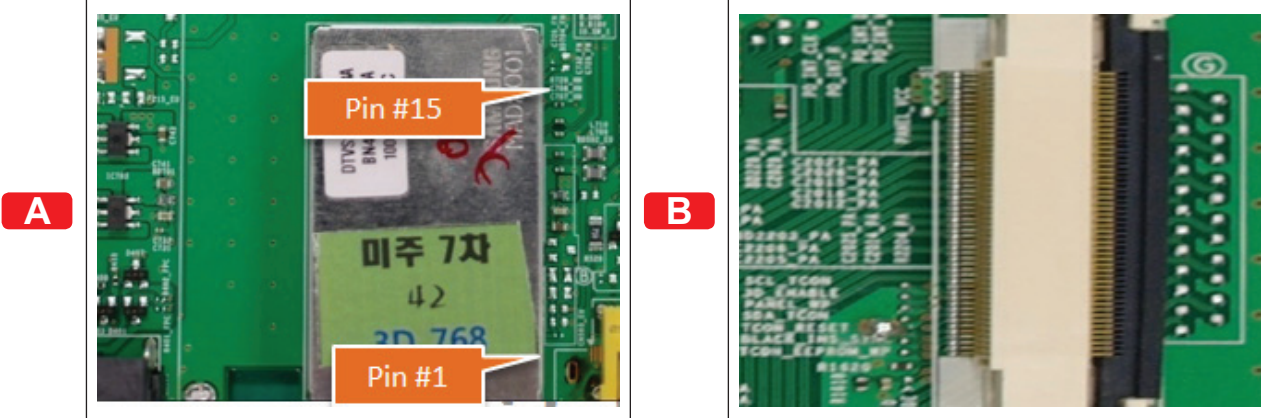
☞ Refer to the next page to check the location such a CN201 or IC201 SVC Manual mentioned.

Symptom	– Audio is normal but no picture is displayed on the screen.
Major checkpoints	<ul style="list-style-type: none"> – Check the DTV source. – Check the Tuner, Check the Valencia. – This may happen when the LVDS cable connecting the Main Board and the Panel is disconnected.
Diagnostics	 <pre> graph TD Q1[Power indicator LED is off. Lamp(Backlight) on, no video ?] -- No --> A1[Check a set in the 'Stand-by mode'.'] Q1 -- Yes --> Q2[Check the RF source and check the connection of RF cable ?] Q2 -- No --> A2[Input the RF source properly.] Q2 -- Yes --> Q3[1 Check the 'signal strength' in Self Diagnosis menu Strength is enough ?] Q3 -- No --> A3[Check the D-TV source.] Q3 -- Yes --> Q4[2 Check the Power of Tuner ? Pin #4 of Tuner : B3.3V_Tuner Pin #2 of Tuner : B1.8V_Tuner] Q4 -- No --> A4[Change the Main Assy.] Q4 -- Yes --> Q5[2 Check the CHIF output of IC801 ? Pin #10 of Tuner : DIF+ Pin #11 of Tuner : DIF-] Q5 -- No --> A5[Check Tuner and IC801(Arsenal). Change the Main Assy.] Q5 -- Yes --> Q6[2 Check the LVDS clk signal at output of Main board ? (TX) TX2_CLK : LV_TX2_DN/DP TX4_CLK : LV_TX4_DN/DP] Q6 -- No --> A6[Check IC1001(GenoaS) and IC2001(Parma). Change the Main Assy.] Q6 -- Yes --> Q7[Check the LVDS cable? Replace the T-con / LCD panel?] Q7 -- No --> A7[Please, contact Tech support.] </pre>
Caution	Make sure to disconnect the power before working on the IP board.

Location (Main)

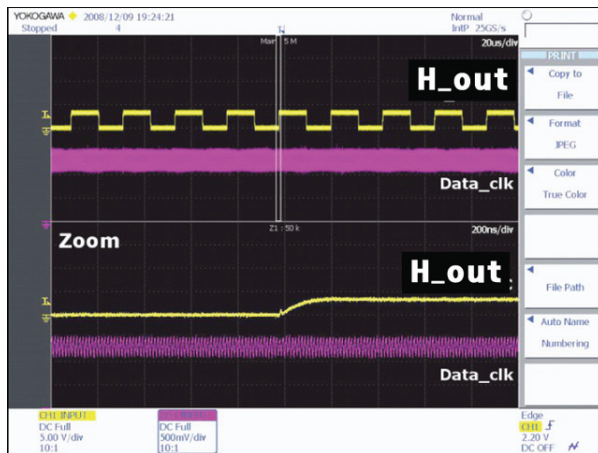


Detail

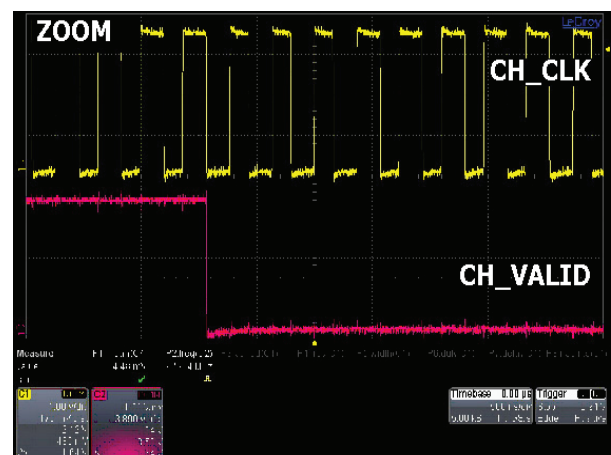
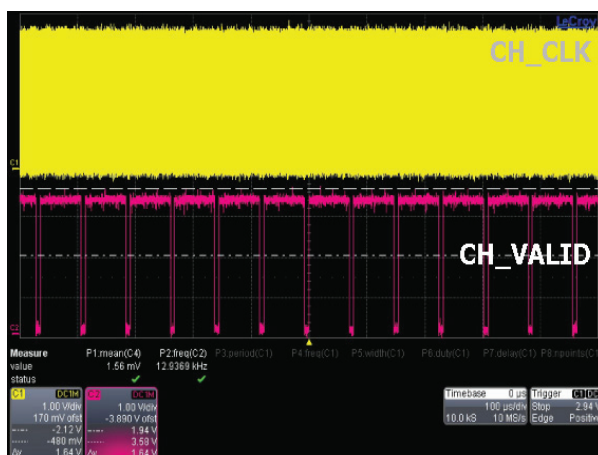


■ WAVEFORMS

① LVDS output

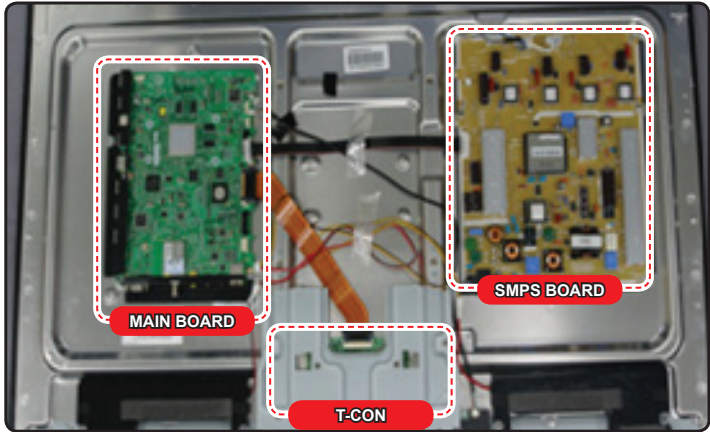


② CH_CLK, CH_VALID

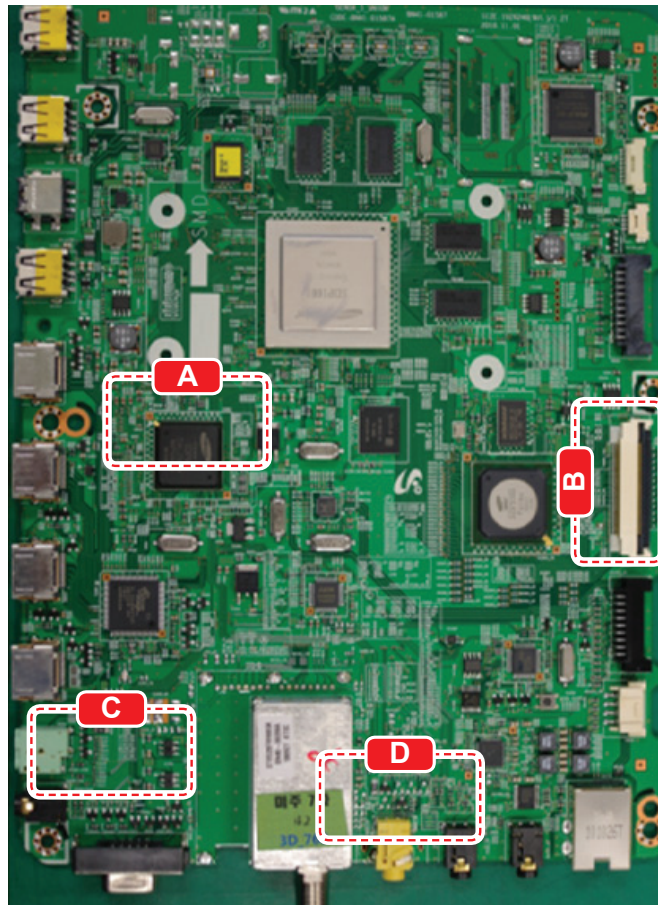


4-1-6. No Video (Video CVBS 1, 2)

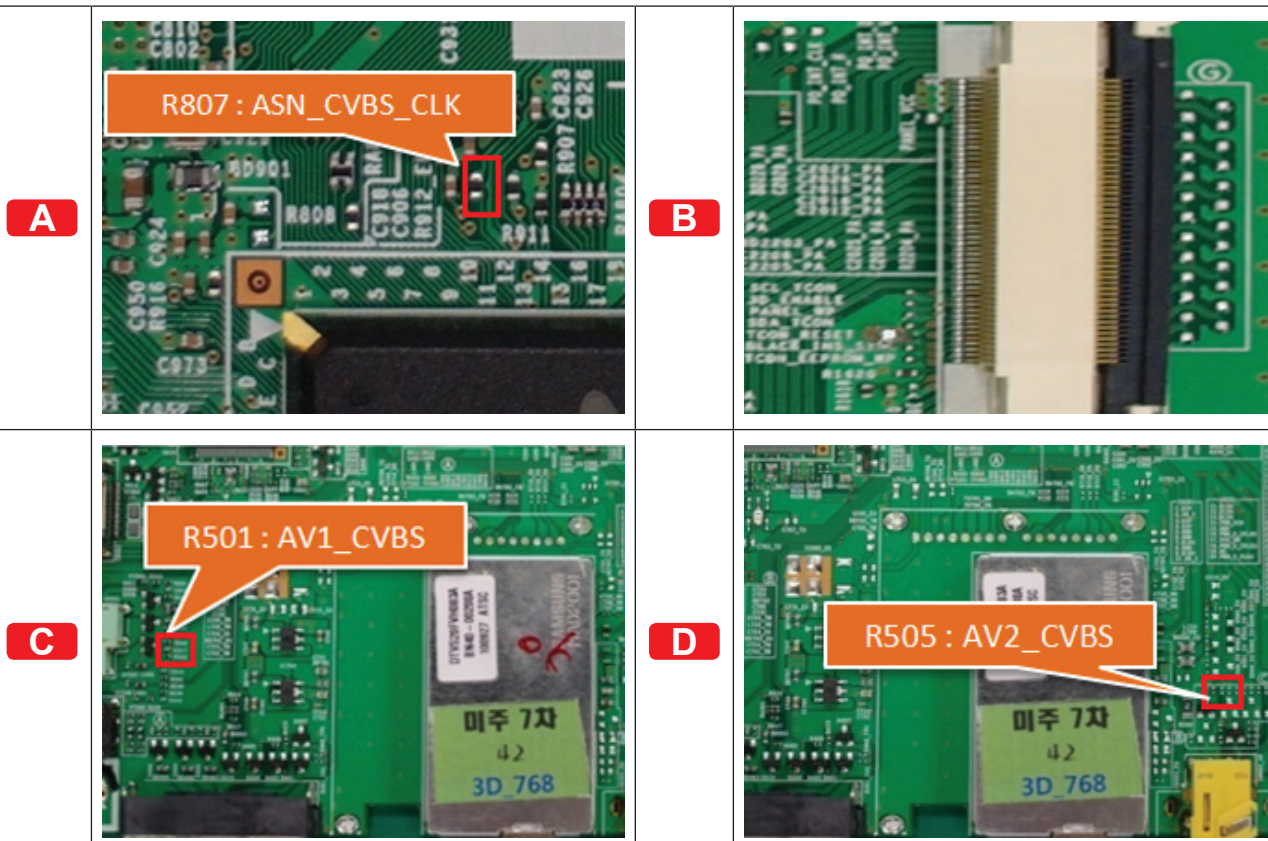
 Refer to the next page to check the location such a CN201 or IC201 SVC Manual mentioned.

Symptom	– Audio is normal but no picture is displayed on the screen.
Major checkpoints	<ul style="list-style-type: none"> – Check the Video CVBS source. – Check the Tuner, Check the Valencia. – This may happen when the LVDS cable connecting the Main Board and the Panel is disconnected.
Diagnostics	 <pre> graph TD Q1[Power indicator LED is off. Lamp(Backlight) on, no video ?] -- No --> A1[Check a set in the 'Stand-by mode'.] Q1 -- Yes --> Q2[Check the RF source and check the connection of RF cable ?] Q2 -- No --> A2[Input the RF source properly.] Q2 -- Yes --> Q3[1 Check the CVBS signal at Input of IC801(Arsenal) ? AV1 R501 : AV1_CVBS AV2 R505 : AV2_CVBS] Q3 -- No --> A3[Check CN502 or CN501. Change the Main Assy.] Q3 -- Yes --> Q4[2 Check the CVBS clk signal at output of IC801 (Arsenal)? R807 : ASN_CVBS_CLK] Q4 -- No --> A4[Check IC1001(GenoaS) and IC2001(Parma). Change the Main Assy.] Q4 -- Yes --> Q5[2 Check the LVDS clk signal at output of Main board ? (TX) TX2_CLK : LV_TX2_DN/DP TX4_CLK : LV_TX4_DN/DP] Q5 -- No --> A5[Check IC1001(GenoaS) and IC2001(Parma). Change the Main Assy.] Q5 -- Yes --> Q6[Check the LVDS cable? Replace the T-con / LCD panel?] Q6 -- No --> A6[Please, contact Tech support.] </pre>
Caution	Make sure to disconnect the power before working on the IP board.

Location (Main)

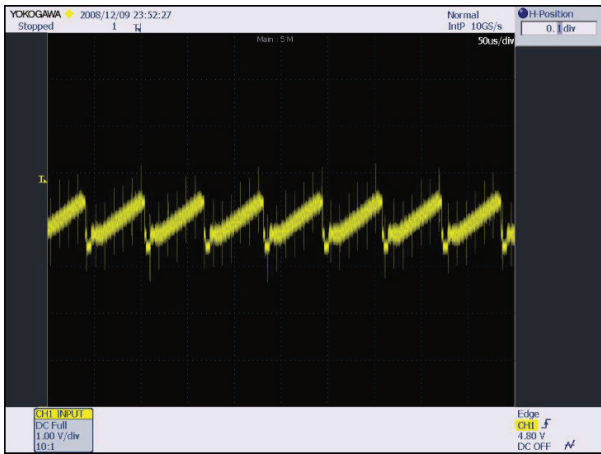


Detail

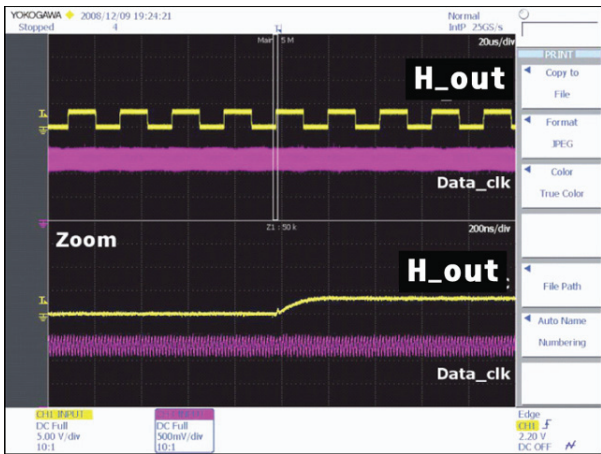


■ WAVEFORMS

① CVBS OUT (Grey Bar)

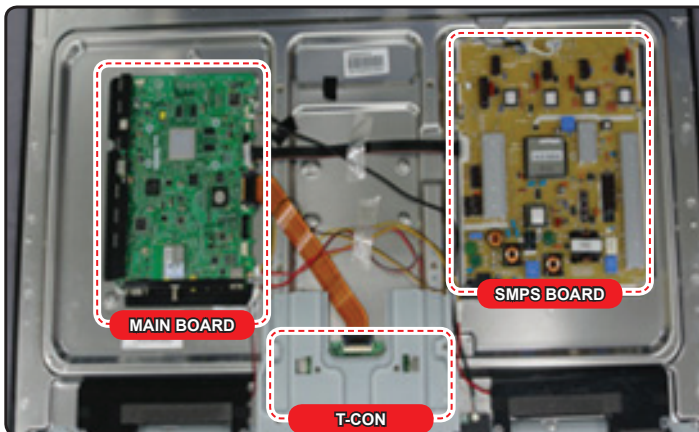


② LVDS output

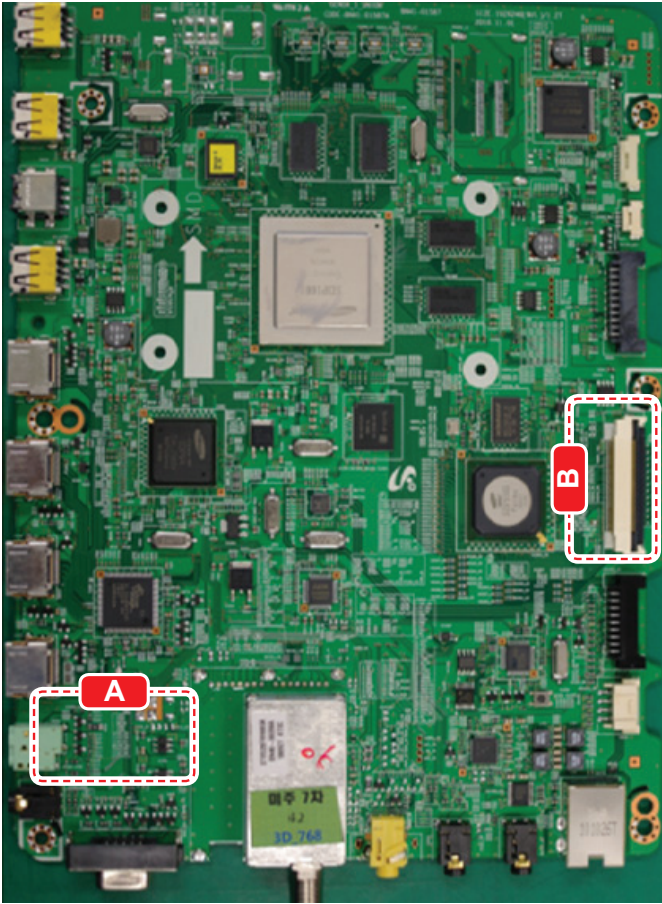


4-1-7. No Video (Component)

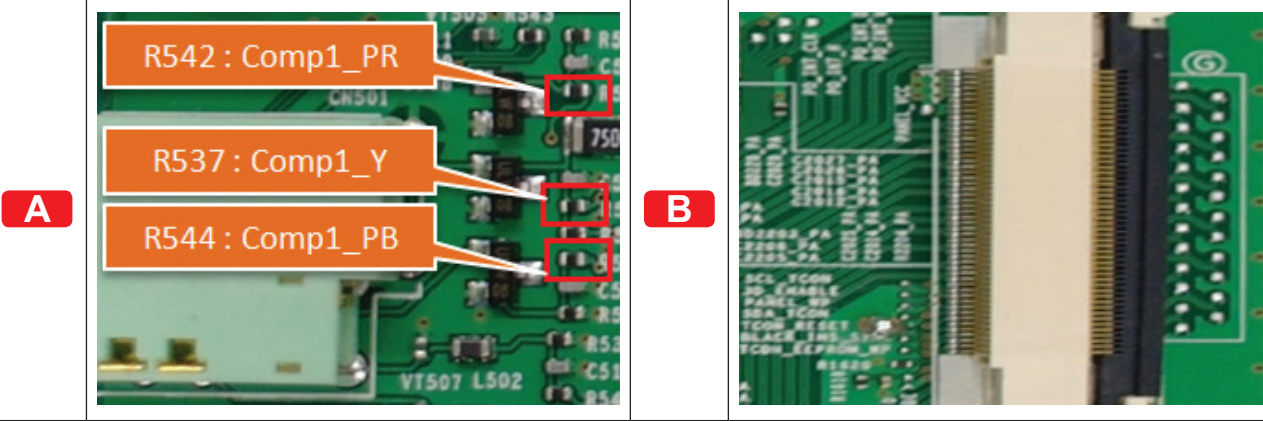
☞ Refer to the next page to check the location such a CN201 or IC201 SVC Manual mentioned.

Symptom	– Audio is normal but no picture is displayed on the screen.
Major checkpoints	<ul style="list-style-type: none"> – Check the Component source – Check the Valencia – This may happen when the LVDS cable connecting the Main Board and the Panel is disconnected.
Diagnostics	 <pre> graph TD Q1[Power indicator LED is off. Lamp(Backlight) on, no video ?] -- No --> A1[Check a set in the 'Stand-by mode'.] Q1 -- Yes --> Q2[Check the component source and check the connection of component cables(Y,Pb,Pr) ?] Q2 -- No --> A2[Input the component source properly.] Q2 -- Yes --> Q3[Does the component data appear at ? Comp1 Y : R537 Pb : R544 Pr : R542] Q3 -- No --> A3[Check CN501 or Component gender. Change the Main Assy.] Q3 -- Yes --> Q4[Check the LVDS clk signal at output of Main board.(TX) TX2_CLK : LV_TX2_DN/DP TX4_CLK : LV_TX4_DN/DP] Q4 -- No --> A4[Check IC1001 (GenoaS) and IC2001(Parma). Change the Main Assy.] Q4 -- Yes --> Q5[Check the LVDS cable? Check the T-con board? Replace the LCD panel?] Q5 -- No --> A5[Please, contact Tech support.] </pre>
Caution	Make sure to disconnect the power before working on the IP board.

Location (Main)

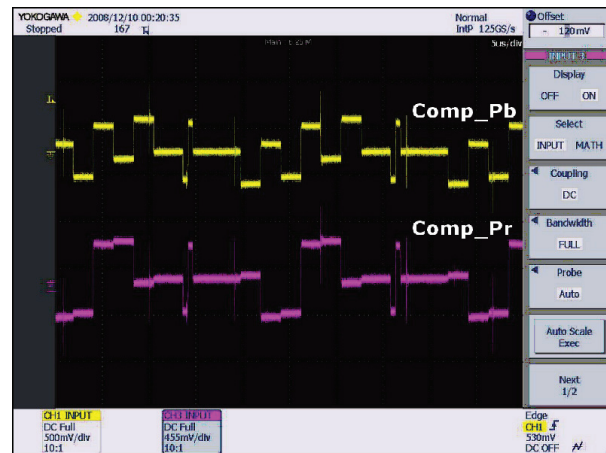
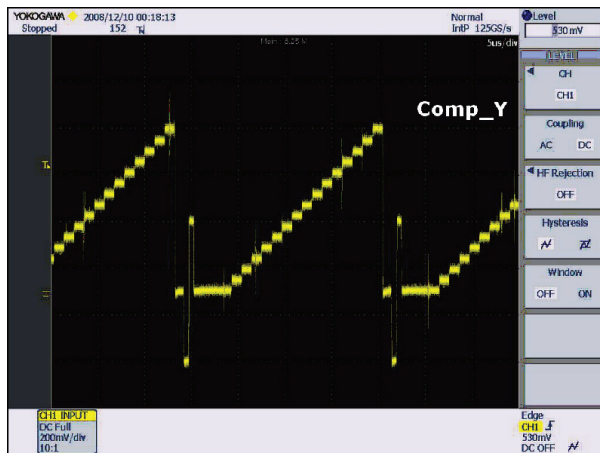


Detail

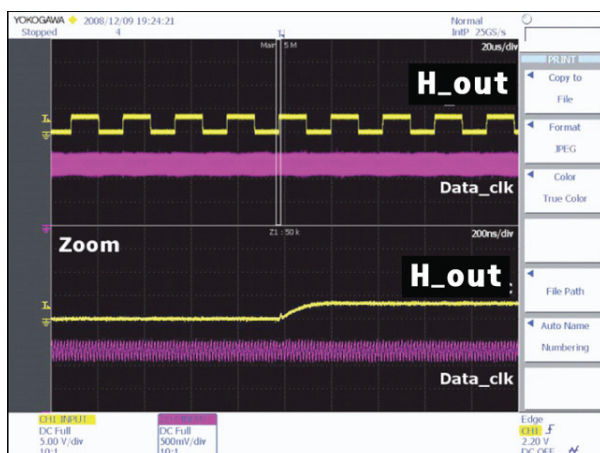


WAVEFORMS

① Component_Y (Gray scale) / Pb / Pr (Color bar)

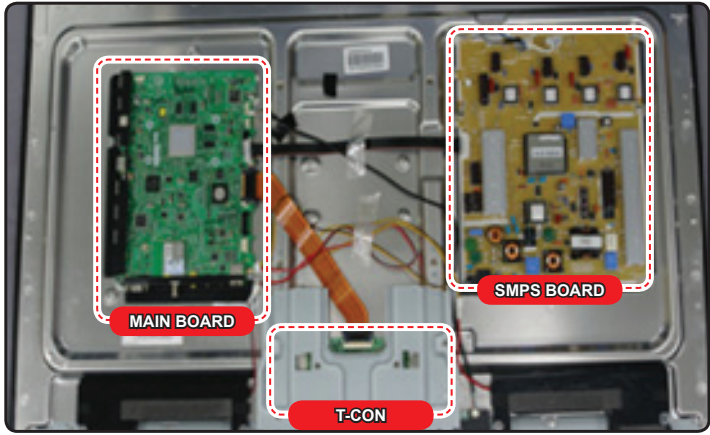


② LVDS output

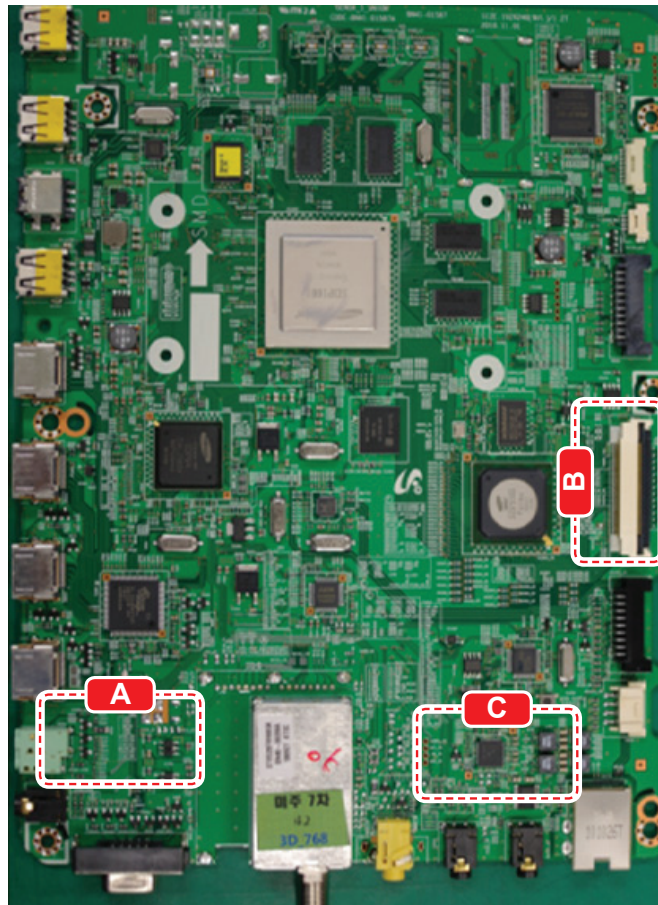


4-1-8. No Sound (1.Speaker 2.Monitor_out, 3.Optical)

☑ Refer to the next page to check the location such a CN201 or IC201 SVC Manual mentioned.

Symptom	– Video is normal but there is no sound.
Major checkpoints	<ul style="list-style-type: none"> – When the speaker connectors are disconnected or damaged. – When the sound processing part of the Main Board is not functioning. – Speaker defect..
Diagnostics	 <pre> graph TD A[Check the source and check the connection of sound cable (Comp/PC/DVI to HDMI) ?] -- No --> B[Input the sound source properly.] A -- Yes --> C[Check the signal at input of Main board? AV1, COMP1 R : R541 / L : R539 PC, DVI R : L401 / L : L402] C -- No --> D[Check CN501, CN402. Change the Main Assy.] C -- Yes --> E[Check the DATA between the Audio IC's ? Pin #15 of IC301 : Mclk Pin #20 of IC301 : LRclk Pin #22,#23 of IC301 : I2C_DA/CL] E -- No --> F[Check IC301, IC303. Change the Main Assy.] E -- Yes --> G[1. Check the Speaker sound data at ? CN301 2. Check the Monitor out sound data at ? CN302 3. Does the SODIF OUT sound data appear at ? CN303] G -- No --> H[Check IC301, IC303. Change the Main Assy.] G -- Yes --> I[Replace speaker ?] I -- No --> J[Please, Contact Tech support.] </pre>
Caution	Make sure to disconnect the power before working on the IP board.

Location (Main)

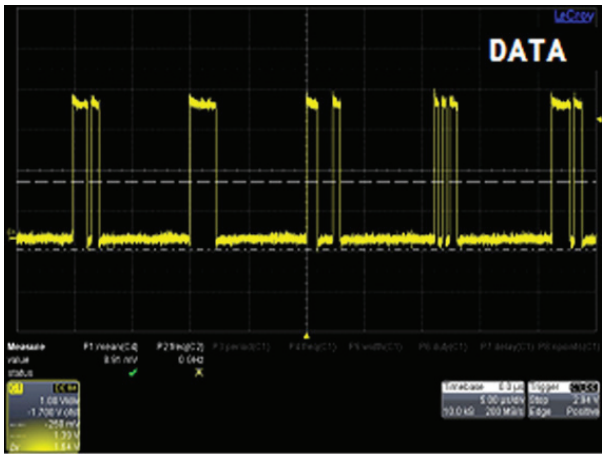
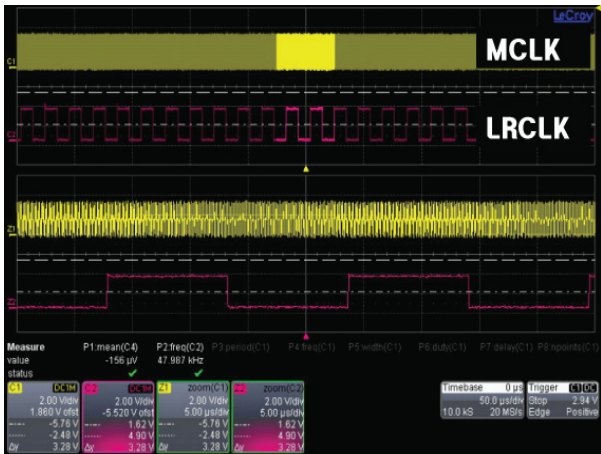


Detail

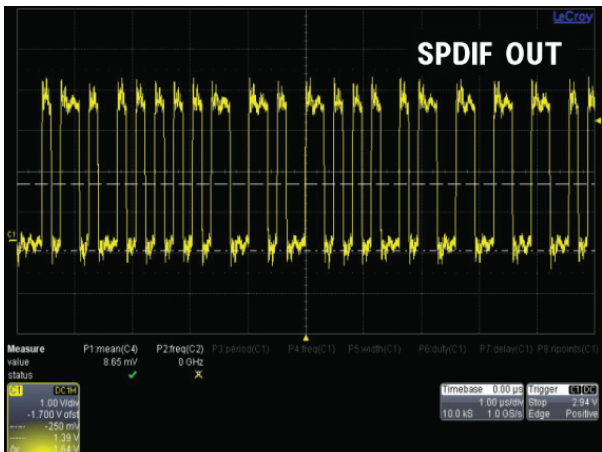
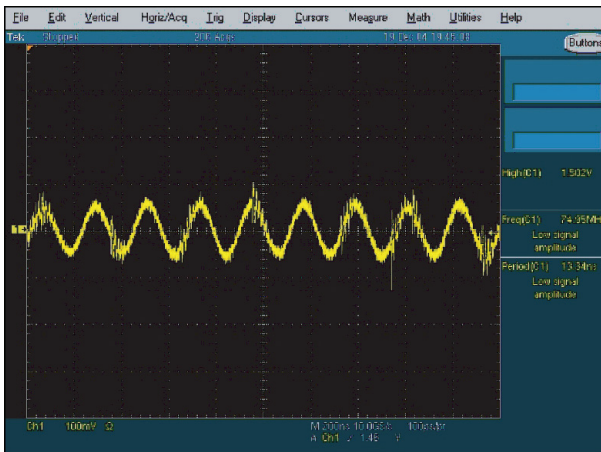
<p>A</p>	<p>R541 : AV1 / Comp R R539 : AV1 / Comp L</p> <p>L401 : PC/DVI R L402 : PC/DVI L</p>	<p>B</p>	
<p>C</p>	<p>Pin # 13</p> <p>Pin # 24</p> <p>Pin # 37</p> <p>Pin # 48</p>		

■ WAVEFORMS

① MCLK / LRCLK / PCM_I2C_DATA



② Speaker / Monitor OUT , SPDIF OUT



4-2. Fuction

4-2-1. Control the sensitivity of function key is available in Factory Mode

Option		
Control	Sub Option	KEY SENSITIVITY
SVC		FUNCTION KEY
Expert		
ADC/WB		
Advanced		

KEY SENSITIVITY

Default : 39

- 1~254, Not Used
- Raising this value, the sensitivity decreases.
- Not Used : Not use sensitivity, use Fuction default value.

FUNCTION KEY

Default : UNLOCK

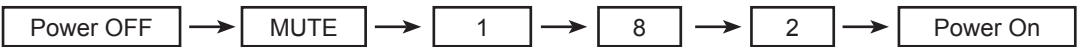
- Set value to 'LOCK', Lock the function key.

4-3. Factory Mode Adjustments

4-3-1. Entering Factory Mode

To enter 'Service Mode' Press the remote -control keys in this sequence :

- If you do not have Factory remote - control



- If you have Factory remote-control



If you don't have Factory remote control, can't control some menus. (Expert, Advanced menu)

Option
Contro
SVC
Expert
ADC/WB
Advanced

```
T-GASAKUC-xxxx
T-GENAUSS1-xxxx
EDID SUCCESS
CALIB : AV O COMP O PC O HMDI O
Option : xxxx xxxx xxx

DTP-SP-VAL-xxxx

RFS : "Genoa.S 0055"
2010-XX-XX
onboot :
GASFRC3D : XXXX
PARMA3D : XXXX
Type : XXXX
Model : UNXXD6XXX
MAC SUCCESS
LOCK X
DRM XX
Factory Data Ver : 88
DTP-AP-COMP-347
DTP-HIGH-0342-1
TLIB US3 1G 2008-11-18-01
DTP-BP-0350
Date of purchase : mm/dd/yyyy
```

4-4. Factory Data

Option			
Factory Menu Name	Data	Range	Remark
Factory Reset	-		
Type	32D1UF3E/40P1UF6E/46P1UF6E/55A1UF6E		
Local set	US		
Model	UD6400/UD6420/UD6450/UD6500/UD6900		
TUNER	SEC_Si2173		
DDR			
Light Effect	Off		
Ch table	...		
Country	USA		
Front Color	U-T-CL-M/U-T-BL-M/U-T-BK-M		

Control			
Factory Menu Name	Data	Range	Remark
EDID			
EDID ON/OFF	Off		
EDID WRITE ALL	...		
EDID WRITE HDMI	...		
EDID WRITE PC	...		
HDMI EDID Ver	...		
HDMI EDID Port	...		

Sub Option			
Region	USA		
PnP Language	ENG_US		
RF Mute Time	0ms		
RS-232 Jack	UART		
Watchdog	OFF		
WD COUNT	255		
Dimm Type	EXT		
LVDS FORMAT	VESA		
Language_Arabic	US		
Auto Power	31		
TOOLS Support	OFF		
LNA Support	OFF		
CI Support			
NETWORK Support			
IPERF			

4. Troubleshooting

Info Link Country			
Info Link Server Type			
TTX List			
TTX Group			
ND ADJ Support			
24Px4 Support			
Power Indicator Support			
BD Wise Support			
RF Remocon Support			
Data Service Support			
PVR Support			
3D Support			
Gemstar Support			
WSS Support			
ColorSpace Support			
OTA Support			
OTA Duration Test			
Alternate Del			
OTN			
OTN Server Type	operating		
OTN Test Server	OFF		
OTN Support	ON		
OTN Reset	-		
OTN Duration	OFF		
OTN Fail Test	OFF		
Cable Modulation	QAM		
PC Auto Ident	Enable		
IIC BUS STOP	OFF		
Visual Test	Diabie		
Emergency Log Copy			
View Log			
Select Log Type	IR KEY		
Log View			
Delete Log			
Spread Spectrum			
HD SSC ON/Off	OFF		
LVDS SSC ON/OFF	ON		
LVDS SSC Value	10		
DDR SSC ON/Off	ON		
DDR SSC Value	4		
Napoli LVDS SSC On/Off	ON		

<i>Napoli LVDS SSC MFR</i>	0		
<i>Napoli LVDS SSC MRR</i>	31		
<i>Napoli DDR SSC ON/OFF</i>	ON		
<i>Napoli DDR SSC MFR</i>	0		
<i>Napoli DDC SSC MRR</i>	26		
DDR Margin	PN		
<i>A CTRL_OFFSET_0_3</i>	0		
<i>A CTRL_OFFSET_D</i>	0		
<i>B CTRL_OFFSET_0_3</i>	0		
<i>B CTRL_OFFSET_D</i>	0		
H.264 Margin	8		
MPEGMargin	1000		
TunerMargin	10		
SST			
<i>Y0 TH</i>	218		
<i>Y1 TH</i>	150		
<i>Y2 TH</i>	122		
<i>Y3 TH</i>	105		
<i>Y4 TH</i>	78		
<i>Y5 TH</i>	62		
<i>Y6 TH</i>	34		
<i>Y7 TH</i>	113		
<i>Cb0 TH</i>	127		
<i>Cb1 TH</i>	51		
<i>Cb2 TH</i>	152		
<i>Cb3 TH</i>	79		
<i>Cb4 TH</i>	177		
<i>Cb5 TH</i>	103		
<i>Cb6 TH</i>	204		
<i>Cb7 TH</i>	128		
<i>Cr0 TH</i>	127		
<i>Cr1 TH</i>	139		
<i>Cr2 TH</i>	54		
<i>Cr3 TH</i>	66		
<i>Cr4 TH</i>	189		
<i>Cr5 TH</i>	201		
<i>Cr6 TH</i>	116		
<i>Cr7 TH</i>	128		
<i>S.DEV0</i>	100		
<i>S.DEV1</i>	80		
OTP Lock	0x0000		

4. Troubleshooting

Checksum			
EEPROM RESET <i>EER RESET</i> <i>NVR All Clear</i>			
3D OPTIMIZE VALUE			
FANET ON/OFF	OFF		
KEY SENSITIVITY	39		
LVDS OUTPUT			
FKP Down			
Function Key	OFF		
WIFI Region	5		
PDP Option			
Hospitality Option			
Shop Option			
Shop Mode	OFF		
Exhibition Mode	OFF		
3D_Emiton	ON		
3D_EmitShowMoe	OFF		
3D_GLASS PULSE_S	5		
3D_GLASS PULSE_H	3		
3D CUBE	OFF		
Asia Option			
TTX	OFF		
China HD	OFF		
NT Conversion	OFF		
Mono Last Memory	OFF		
Unbalance	OFF		
IF AGC	7		
D AGC	0		
PH BW	3		
FQ BW	3		
PH RATE	4		
PD EN	1		
SOUND			
High Devi	OFF		
Carrier Mute	ON		
Volume Curve	Type1		
Pilot Level High Thld	0x30h		
Pilot Level Low Thld	0x10h		
Chattering Cnt	5		
FM Prescale	0x14h		

AM Prescale	0x1Ah		
NICAM Prescale	0x14h		
Amp Volume	0xCBh		
Amp Scale	0x3Dh		
AMP Speaker EQ	ON		
AMP EQ CheckSum	0xBCC084		
AMP PEQ Test	Ready		
AMP PEQ Dump			
SPDIF PCM Level	-9		
DNSe-IP Test	Ready		
DNSe-IP CheckSum	0x0000		

Config Option

Num of ATV	1		
Num of DTV	2		
Num of AV	0		
Num of SVIDEO	1		
Num of COMP	4		
Num of HDMI	1		
Num of PC	0		
Num of SCART	0		
Num of DVI	0		
Num of OPTICAL Link	1		
Num of MEDIA	6		
Num of PANEL KEY	2		
Num of USB Port	0		
MFT Offset	62.5		
Select LCD/PDP	LCD		
Num of DECODER	2		
Num of TUNER	1		
HDMI/DVI SEL	1		
Indicator Led	ON		
Wall Mount	OFF		
HV Flip	ON		
Num Of Display	2		
DVI/HDMI SOUND	Auto		
HDMI HOT PLUG	Disable		
HOTPLUG SWITCHING	Boot		
CLK TERMDURATION	300ms		
HOT PLUG OFF HOLD TIME	1200ms		
HDMI FLT CNT SIG	100ms		
HDMI FLT CNT LOS	100ms		

4. Troubleshooting

UNSTABLE BAN CNT	1250ms		
HDMI Err Cnt	1		
HDMI ROBIN	ON		
HDMI Callback	ON		
HDMI CTS Thld	0		
HDMI CTS Cnt1	0		
HDMI 3D Det	1		
TMDS_EQ2_Boost	1		
TMDS_EQ2_Gain	0		
TMDS_PLL_Loop	3		
TMDS_CPREG_BLEED	1		
HDMI EQ	AUTO		
HDMI EDID CTRL Type	Combine		
DVI SET TIME	300ms		
Type Of PANEL KEY	Vertical		
LD CTRL SELECT	FULL_CTRL		
PVR Record NUM	1		
Backend Device	NAPOLI		
ENCORDER	NXC1000		
BPARD CONTROL	ON		
All Share Support	ON		

SCC

SCC Mode	Dynamic		
SCC ON/OFF	Off		
SCC Input Data			
<i>Hx</i>	272		
<i>Hy</i>	278		
<i>Lx</i>	272		
<i>Ly</i>	278		
sSCC Const			
<i>sSCC Hx</i>	545		
<i>sSCC Hy</i>	571		
<i>sSCC Lx</i>	544		
<i>sSCC Ly</i>	572		
pSCC Const			
<i>pSCC Hx</i>	545		
<i>pSCC Hy</i>	571		
<i>pSCC Lx</i>	544		
<i>pSCC Ly</i>	572		
SCC Source Data	PBA		

SWAP	PBA		
------	-----	--	--

SVC			
Factory Menu Name	Data	Range	Remark
Test Pattern			
LOGIC Pattern Sel	0		
LOGIC Level Sel	255		
LDAsic Pattern Sel	0		
GenaoP Pattern Sel	0		
GenoaS Pattern Sel	0		
Napoli Pre Test Pattern	0		
Napoli Post Test Pattern	0		
Napoli FDISPLAY ON/OFF	OFF		
Napoli PC Mode ON/OFF	OFF		
HDMI WB Pattern	OFF		
HDMI Pattern Sel	0		
GenoaS FRC Post Test Pattern	0		
GenoaS FRC FDISPLAY ON/OFF	OFF		
GenoaS FRC PC Mode ON/OFF	OFF		
Panel Auto Setting	Fail		
PANEL DISPLAY TIME	0Hr		
T-CON USB Download	Failure		
T-CON CheckSum			
CPLD USB Download	Failure		
REMOCON PAIRING	X		
TC905x7			
MICOM UPGRADE	Off		
Function UPGRADE	Failure		
Temp Last	60		
Temp Read	0		
DCC Version	0x40519		
DCC_CHK_SEL	0		
DCC_Check_Local	0x0		
DCC_Check_Total	0x0		
IR_ON_OFF	ON		
BT ADDRESS	0a5c00157085		
SVC Reset			

Expert			
Factory Menu Name	Data	Range	Remark
N/D ADJ	OFF		

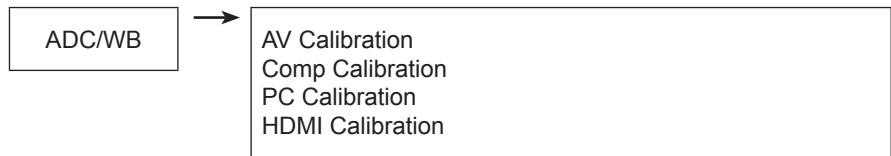
4. Troubleshooting

Source	...		
ADC/WB			
Factory Menu Name	Data	Range	Remark
ADC			
AV Calibration	Success		
Comp Calibraion	Success		
PC Calibration	Success		
HDMI Calibration	Success		
ADC Target			
1st_AV_Low	64		
1st_AV_High	880		
1st_AV_Delta	2		
1st_COMP_Y_Low	64		
1st_COMP_Cb_Low	512		
1st_COMP_Cr_Low	512		
1st_COMP_Y_High	940		
1st_COMP_Cb_High	512		
1st_COMP_Cr_High	512		
1st_COMP_Delta	2		
1st_PC_Low	16		
1st_PC_High	1004		
2nd_AV_Low	4		
2nd_AV_High	940		
2nd_PC_Low	4		
2nd_PC_High	940		
2nd_Delta	2		
ADC Result			
1st_Y_GH	250		
1st_Y_GL	246		
1st_Cb_BH	...		
1st_Cb_BL	...		
1st_Cr_RH	...		
1st_Cr_RL	...		
2nd_R_L	130		
2nd_G_L	130		
2nd_B_L	130		
2nd_R_H	108		
2nd_G_H	108		
2nd_B_H	108		
White Balance			
Sub Brightness	128		

R-Offset	128		
G-Offset	128		
B-Offset	128		
Sub Contrast	128		
R-Gain	128		
G-Gain	128		
B-Gain	128		
Movie R-Offset	128		
Movie B-Offset	128		
Movie R-Gain	128		
Movie B-Gain	128		

4-5. White Balance

4-5-1. Calibration



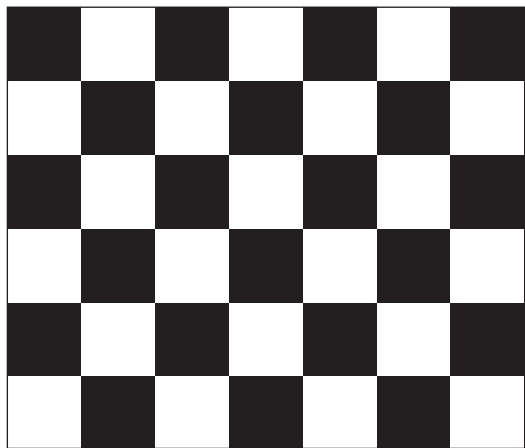
4-5-2. Service Adjustment

You must perform Calibration in the Lattice Pattern before adjusting the White Balance.

■ Color Calibration

Adjust spec.

1. Source : HDMI
2. Setting Mode : 1280 x 720@60Hz
3. Pattern : Pattern #24 (Chess Pattern)



(Chess Pattern)

4. Use Equipment : CA210 & Master MSPG925 Generator

- Use other equipment only after comparing the result with that of the Master equipment.

Input mode	Calibration	Pattern
CVBS IN (Model_#1)	Perform in NTSC B&W Pattern #24	Lattice
Component IN (Model_#6)	Perform in 720p B&W Pattern #24	Lattice
PC Analog IN (Model_#21)	Perform in VESA XGA (1024x768) B&W Pattern #24	Lattice
HDMI IN	Perform in 720p B&W Pattern #24	Lattice

<Table 1>

■ Method of Color Calibration (AV)

- 1) Apply the NTSC Lattice (N0. 3) pattern signal to the AV IN 1 port
- 2) Press the Source key to switch to "AV1" mode
- 3) Enter Service mode
- 4) Select the "ADC/WB" and "ADB" menu
- 5) Select the "AV Calibration" menu.
- 6) In "AV Calibration Off" status, press the "▶" key to perform Calibration.
- 7) When Calibration is complete, it returns to the high-level menu.
- 8) You can see the change of the "AV Calibration" status from Failure to Success.

■ Method of Color Calibration (Component)

- 1) Apply the 720p Lattice (N0. 6) pattern signal to the Component IN 1 port
- 2) Press the Source key to switch to "component" mode
- 3) Enter Service mode
- 4) Select the "ADC/WB" and "ADB" menu
- 5) Select the "Comp Calibration" menu.
- 6) In "Comp Calibration Off" status, press the "▶" key to perform Calibration.
- 7) When Calibration is complete, it returns to the high-level menu.
- 8) You can see the change of the "Comp Calibration" status from Failure to Success.

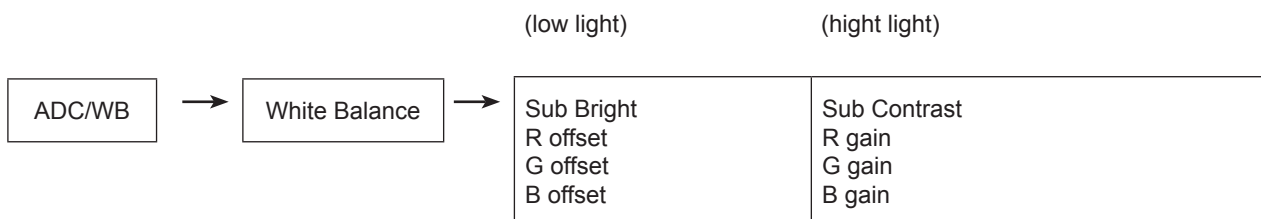
■ Method of Color Calibration (PC)

- 1) Apply the VESA XGA Lattice (N0. 21) pattern signal to the PC IN port
- 2) Press the Source key to switch to "PC" mode
- 3) Enter Service mode
- 4) Select the "ADC/WB" and "ADB" menu
- 5) Select the "PC Calibration" menu.
- 6) In "PC Calibration Off" status, press the "▶" key to perform Calibration.
- 7) When Calibration is complete, it returns to the high-level menu.
- 8) You can see the change of the "PC Calibration" status from Failure to Success.

■ Method of Color Calibration (HDMI)

- 1) Apply the 720p Lattice (N0. 6) pattern signal to the HDMI1/DVI IN port
- 2) Press the Source key to switch to "HDMI1" mode
- 3) Enter Service mode
- 4) Select the "ADC/WB" and "ADB" menu
- 5) Select the "HDMI Calibration" menu.
- 6) In "HDMI Calibration Off" status, press the "▶" key to perform Calibration.
- 7) When Calibration is complete, it returns to the high-level menu.
- 8) You can see the change of the "HDMI Calibration" status from Failure to Success.

4-6-3. Adjustment



(W/B adjustment Condition refer next page)

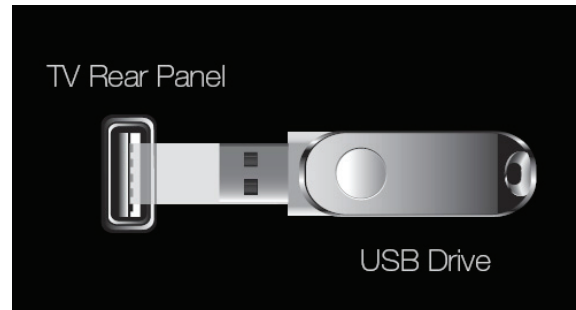
4-6. Software Upgrade

Software Upgrade can be performed by network connection or downloading the latest firmware from "www.samsung.com" to a USB memory device.

■ By USB

Insert a USB drive containing the firmware upgrade file, downloaded from "www.samsung.com" into the TV.

Please be careful not to disconnect the power or remove the USB drive until upgrades are complete. The TV will be turned off and on automatically after completing the firmware upgrade. When software is upgraded, video and audio settings you have made will return to their default settings. We advise you to write down your settings so that you can easily reset them after the upgrade.



** The displayed menu may differ depending on the model.*

■ By Online

Upgrades the software using the Internet.

- First, configure your network. For detailed procedures on using the Network Setting, refer to the 'Setting the Network' instructions.
- If The internet connection doesn't operate properly, connection can be broken, please retry downloading.

If the problem still happens, download by USB and upgrade.

■ Alternative Software (Backup)

If there is an issue with the new firmware and it is affecting operation, you can change the software to the previous version.

- If Software was changed, existing Software is displayed.
- You can change current Software to Alternative Software by 'Alternative Software'.

4-7. RS-232C

1. To RS232C Control

Port : COM#(Serial)

Bit rate : 115200

Data Bit : 8 bit

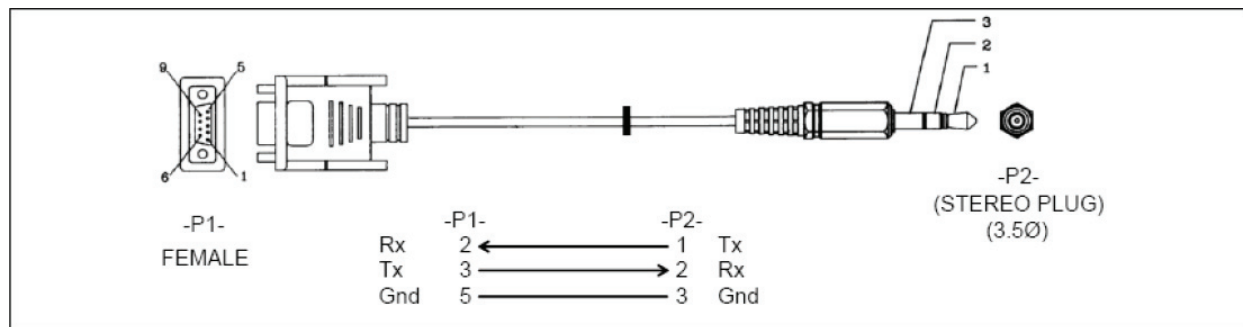
Parity : None

Stop Bits : 1

Flow Control : None

2. Description of RS232C

Pin#	Name	Full Name
1	CD	Carrier Detect
2	RxD	Received Data
3	TxD	Transmitted Data
4	DTR	Data Terminal Ready
5	GND	Signal Ground
6	DSR	Data Set Ready
7	RTS	Request To Send
8	CTS	Clear To Send
9	RI	Ring Indicator



4-8. AV control code

Control Item				Cmd1	Cmd2	Cmd3	Value	
General	Power	Power		0x00	0x00	0x00	0x00	
		Off					0x01	
		On					0x02	
	Volume	Direct		0x01	0x00	0x00	(0~100)	
		Up				0x01	0x00	
		Down				0x02	0x00	
	Mute			0x02	0x00	0x00	0x00	
		Ch.	Direct		0x04	-		
			Continuous	Up	0x03	0x00	0x01	0x00
Down				0x02			0x00	

Control Item				Cmd1	Cmd2	Cmd3	Value
Input	Source List	TV		0x0a	0x00	0x00	0x00
		AV	TV			0x01	0x00
			AV1				0x01
			AV2				0x02
			AV3				0x00
		S-Video	S-Video1			0x02	0x01
			S-Video2				0x02
			S-Video3				0x00
		Component	Component1			0x03	0x01
			Component2				0x02
			Component3				0x00
		PC	PC1			0x04	0x01
			PC2				0x02
			PC3				0x00
		HDMI	HDMI1			0x05	0x01
			HDMI2				0x02
			HDMI3				0x03
			HDMI4				0x00
		DVI	DVI1			0x06	0x01
			DVI2				0x02
			DVI3				

		Control Item	Cmd1	Cmd2	Cmd3	Value
PICTURE	Mode	Dynamic(Entertain)	0x0b	0x00	0x00	0x00
		Standard				0x01
		Movie				0x02
		Natural				0x03
		CAL-NIGHT				0x04
		CAL-DAY				0x05
		BD Wise				0x06
	BackLight			0x01	0x00	(0~20)
	Contrast			0x02	0x00	(0~100)
	Brightness			0x03	0x00	(0~100)
	Sharpness			0x04	0x00	(0~100)
	Color			0x05	0x00	(0~100)
	Tint	G/R		0x06	0x00	(0~100)
	Advanced Settings	Black Tone		0x07	0x00	0x00
						0x01
						0x02
						0x03
		Dynamic Contrast	Off		0x01	0x00
			Low			0x01
			Medium			0x02
			High			
		Shadow Detail	-2 ~ 2		0x02	(-2~2)
		Gamma	-3 ~ 3		0x03	(-3~3)
		RGB Only Mode	Off		0x05	0x00
			Red			0x01
			Green			0x02
			Blue			0x03
		Color Space	Auto		0x06	0x00
			Native			0x01
			Custom			0x02
		White Balance	R-Offset(LCD)		0x07	(0~50)
		White Balance	G-Offset(LCD)		0x08	(0~50)
		White Balance	B-Offset(LCD)		0x09	(0~50)
		White Balance	R-Gain(LCD)		0x0a	(0~50)
		White Balance	G-Gain(LCD)		0x0b	(0~50)
		White Balance	B-Gain(LCD)		0x0c	(0~50)
		White Balance	Reset(LCD)		0x0d	0x00
		Flesh Tone	-15 ~ 15		0x0e	(-15~15)
		Edge Enhancement	Off		0x0f	0x00
			On			0x01

4. Troubleshooting

		xvYCC	Off			0x10	0x00
			On				0x01
		Motion Lighting	Off			0x11	0x00
			On				0x01
		LED Motion Plus	Off			0x07	0x00
			On(Normal)				0x01
			Cinema				0x02
			Ticker				0x03
	Picture Option	Color Tone	Cool		0x0a	0x00	0x00
			Normal				0x01
			Warm1				0x02
			Warm2				0x03
		Digital Noise Filter	Off			0x02	0x00
			Low				0x01
			Medium				0x02
			High				0x03
			Auto				0x04
			Auto Visualization				0x05
		MPEG Noise Filter	Off			0x03	0x00
			Low				0x01
			Medium				0x02
			High				0x03
			Auto				0x04
		HDMI Black Level	Normal			0x04	0x00
			Low				0x01
		Film Mode	Off			0x05	0x00
			Auto1				0x01
			Auto2				0x02
		Auto Motion Plus	Off			0x06	0x00
			Clear				0x01
			Standard				0x02
			Smooth				0x03
			Custom				0x04
			Demo				0x05
	Screen Adjustment	Picture Size	16:9	0x0b	0x0a	0x01	0x00
			Zoom1				0x01
			Zoom2				0x02
			Wide Fit				0x03
			4:3				0x04
			Screen Fit				0x05
			Smart View I				0x06

			Smart View II				0x07
	Reset Picture	Reset Picture		0x0b	0x0b	0x00	0x00
	3D	3D Mode	Off	0x0b	0x0c	0x00	0x00
			2D->3D				0x01
			Side By Side				0x02
			Top Bottom				0x03
			Line By Line				0x04
			Vertical Line				0x05
			Checker BD				0x06
			Frame Sequence				0x07
		3D →2D	Off			0x01	0x00
			On				0x01
		3D View Point				0x02	(-5~5)
		Depth				0x03	(1~10)
		Picture Correction				0x04	0x00
		3D Auto View	Off			0x05	0x00
			Message Notice				0x01
			On				0x02

Control Item			Cmd1	Cmd2	Cmd3	Value
Sound	SRS TheaterSound(Genoa)	Standard	0x0c	0x00	0x00	0x00
	Sound Mode(X6)	Music				0x01
		Movie				0x02
		Clear Voice				0x03
		Amplify				0x04
	Equalizer	Balance		0x01	0x00	(0~20)
		100hz			0x01	(0~20)
		300hz			0x02	(0~20)
		1khz			0x03	(0~20)
		3khz			0x04	(0~20)
		10khz			0x05	(0~20)
		Reset			0x06	0x00
	SRS TruSurround HD(Genoa)	Off		0x02	0x00	0x00
	Virtual Surrond(X6)	On				0x01
	SRS TruDialog(Genoa)	Off		0x03	0x00	0x00
	Dialog Clarify(X6)	On				0x01
	Preferred Language	English		0x04	0x00	0x00
		Spanish				0x01
		French				0x02
		Korean				0x03
		Japanese				0x04

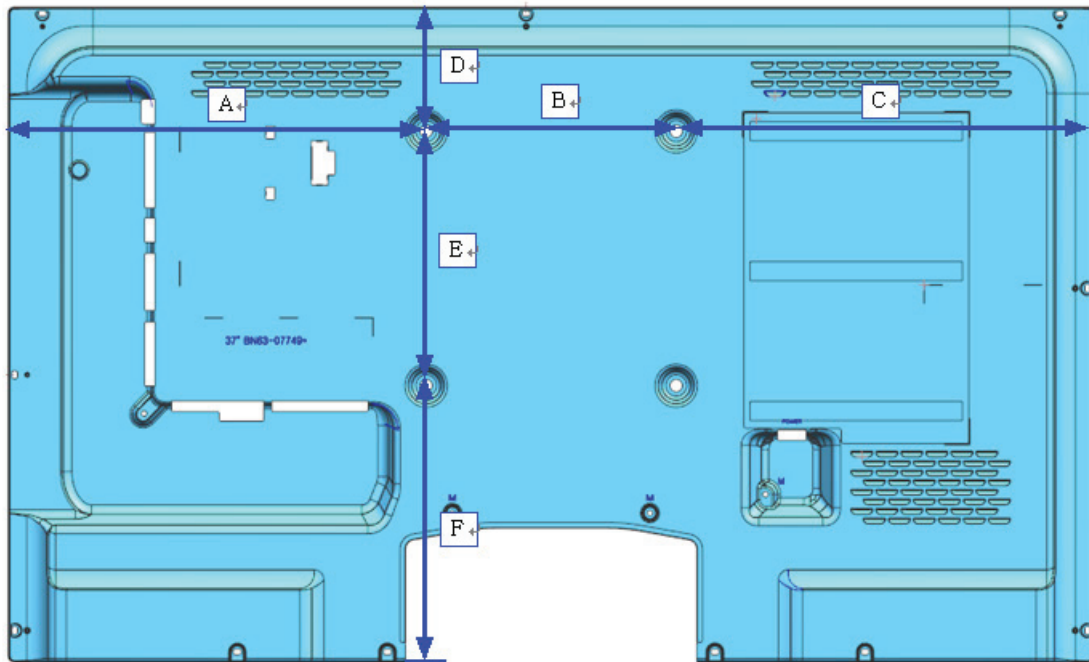
4. Troubleshooting

	Multi-Track Sound	Mono		0x05	0x00	0x00
		Stereo				0x01
		SAP				0x02
	Auto Volume	Off		0x06	0x00	0x00
		Normal				0x01
		Night				0x02
	Speaker Select	TV Speaker		0x07	0x00	0x00
		External Speaker				0x01
	Sound Select	Main		0x08	0x00	0x00
		Sub				0x01
	Sound Reset	Sound Reset		0x09	0x00	0x00
KEY	Key Generation		0x0d	0x00	0x00	refer to the table of below

Key value	Value
Up	96 (0x60)
Down	97 (0x61)
Left	101 (0x65)
Right	98 (0x62)
Menu	26 (0x1A)
Internet	147 (0x93)
Enter(OK)	104 (0x68)
EXIT	45 (0x2D)

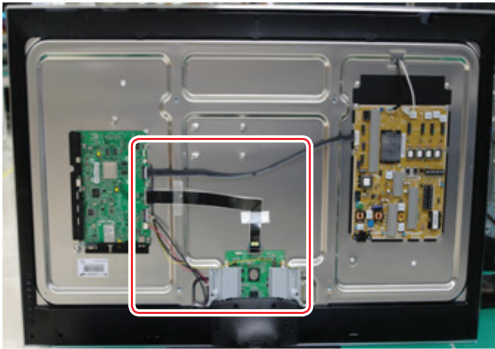
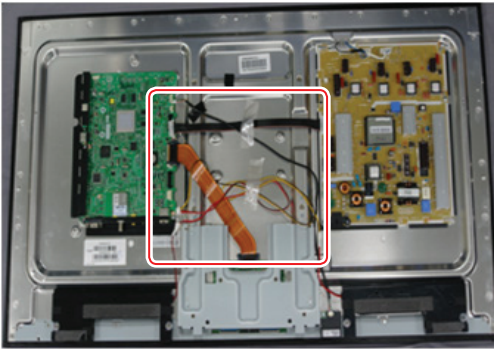
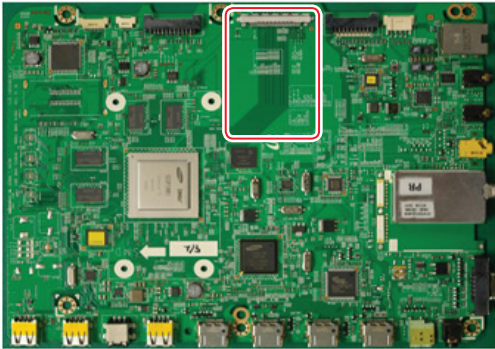
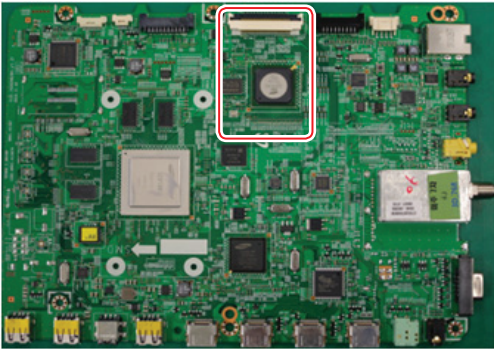
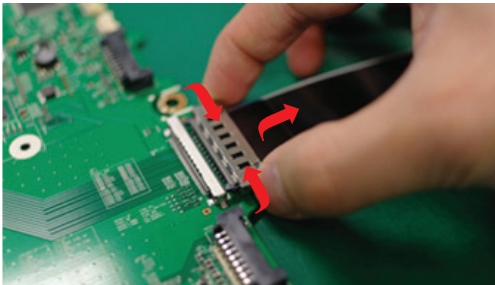
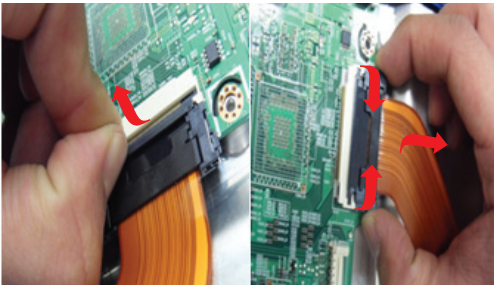
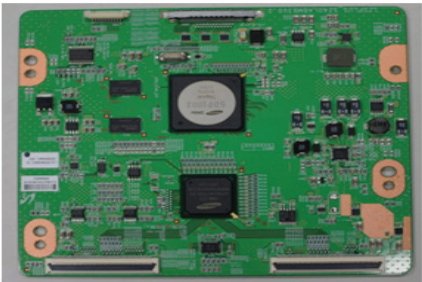
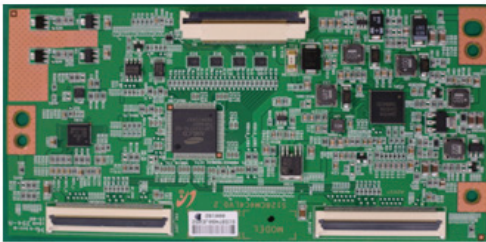
4-9. Rear Cover Dimension



Cover-Rear Area



Inch	A	B	C	D	E	F
32"	273.5	200	273.5	90.7	200	155.4
40"	367.1	200	367.1	133.4	200	218.1
46"	334.8	400	334.8	98.6	400	129.3
55"	430.1	400	430.1	187.3	400	142.4

4-10. Compare 55 inch with Others

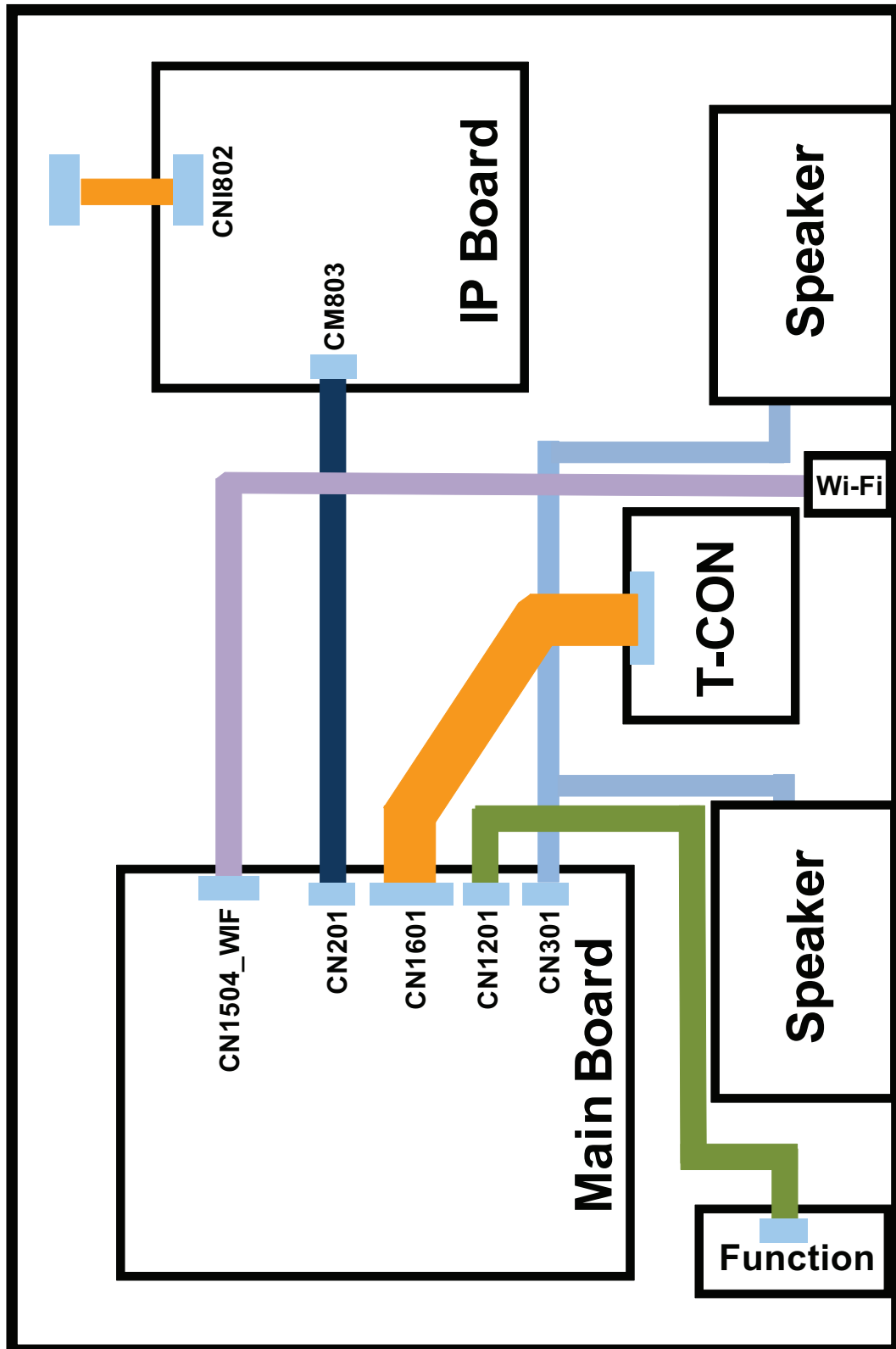
55 inch	Other Inch
Rear View	
	
60Hz, 2CH LVDS	120Hz, 4CH LVDS
Main Board	
	
2ch lvds signal (BN41-01683A)	4ch lvds signal
LVDS Connection	
	
LVDS single locking type	LVDS double locking type
T-CON Board	
	
T-con B'd has Napoli IC (BN96-16498A)	T-con B'd normal 120Hz

55 inch	Other Inch
LVDS Cable	
	
60Hz 2ch FFC Cable (BN96-17116K)	120Hz 4ch FPCB Cable

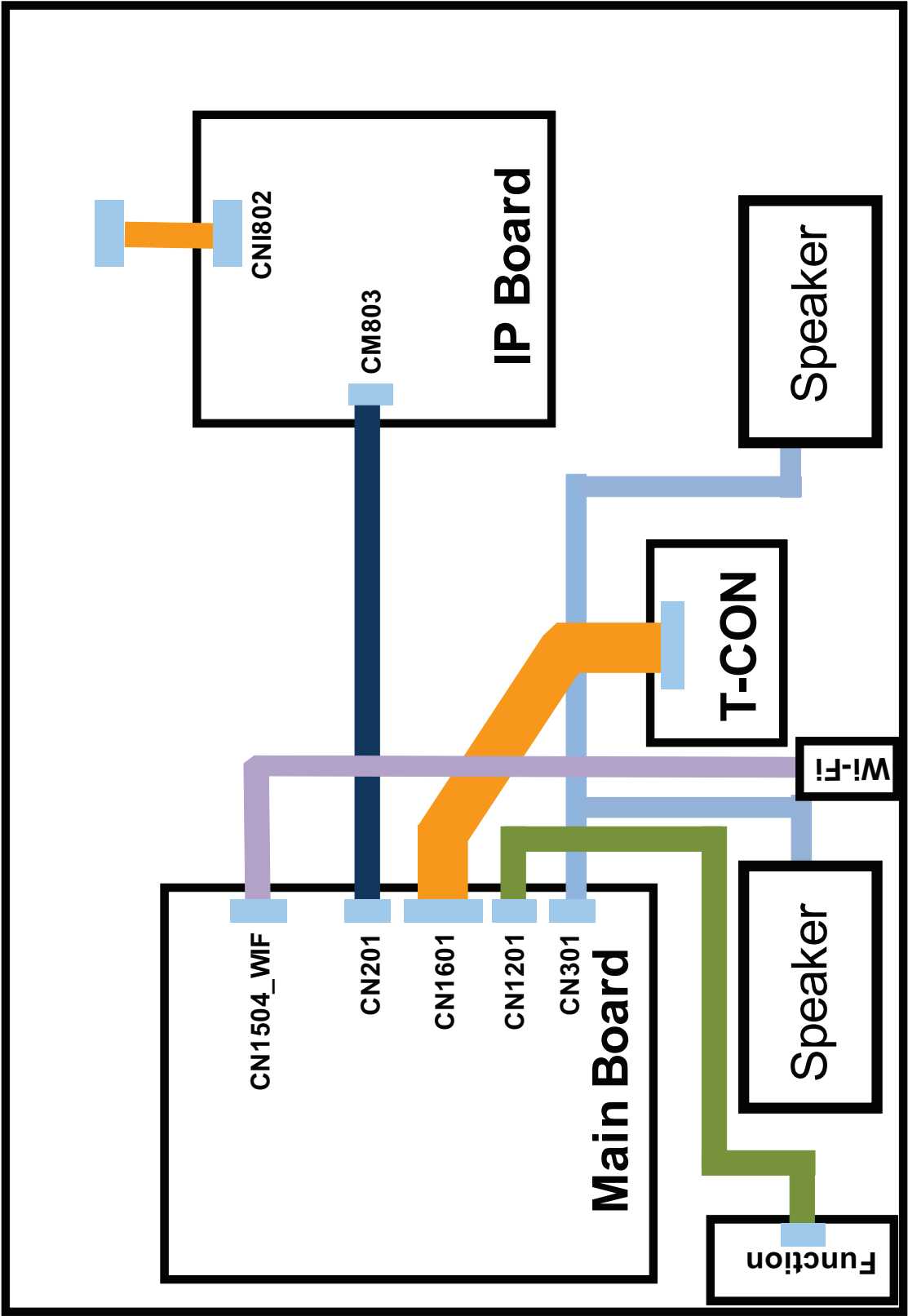
5. Wiring Diagram

5-1. Wiring Diagram

■ For 32" _42"



■ For 46" _55"



5-2. Connector For common

CN1405_FHD (to Panel)			
1	N.C(HVS for LCD)	42	Ch1[0]-
2	LUT_SELECT1	43	GND
3	TCON_EEPROM_WP	44	GND
4	BLACK_INS_SYNC	45	GND
5	TCON_RESET	46	N.C.
6	NC	47	Panel_VCC
7	NC	48	Panel_VCC
8	SDA_I(for	49	Panel_VCC
9	WP(EEPROM)	50	Panel_VCC
10	LUT_SELECT0	51	Panel_VCC
11	3D_ENABLE	52	GND
12	SCL_I(for	53	Ch2[0]-
13	GND	54	Ch2[0]+
14	Ch3[4]+	55	Ch2[1]-
15	Ch3[4]-	56	Ch2[1]+
16	Ch3[3]+	57	Ch2[2]-
17	Ch3[3]-	58	Ch2[2]+
18	GND	59	GND
19	Ch3CLK+	60	Ch2CLK-
20	Ch3CLK-	61	Ch2CLK+
21	GND	62	GND
22	Ch3[2]+	63	Ch2[3]-
23	Ch3[2]-	64	Ch2[3]+
24	Ch3[1]+	65	Ch2[4]-
25	Ch3[1]-	66	Ch2[4]+
26	Ch3[0]+	67	GND
27	Ch3[0]-	68	Ch4[0]-
28	GND	69	Ch4[0]+
29	Ch1[4]+	70	Ch4[1]-
30	Ch1[4]-	71	Ch4[1]+
31	Ch1[3]+	72	Ch4[2]-
32	Ch1[3]-	73	Ch4[2]+
33	GND	74	GND
34	Ch1CLK+	75	Ch4CLK-
35	Ch1CLK-	76	Ch4CLK+
36	GND	77	GND
37	Ch1[2]+	78	Ch4[3]-
38	Ch1[2]-	79	Ch4[3]+
39	Ch1[1]+	80	Ch4[4]-
40	Ch1[1]-	81	Ch4[4]+
41	Ch1[0]+	82	GND

CN602(to HDMI1)			
1	HDMI1_RX2+	10	HDMI1_RXCLK+
2	GND	11	GND
3	HDMI1_RX2-	12	HDMI1_RXCLK-
4	HDMI1_RX1+	13	HDMI_CEC
5	GND	14	GND
6	HDMI1_RX1-	15	HDMI1_DDC_SCL
7	HDMI1_RX0+	16	HDMI1_DDC_SDA
8	GND	17	GND
9	HDMI1_RX0-	18	HDMI1_5V

CN603(to HDMI2)			
1	HDMI2_RX2+	10	HDMI2_RXCLK+
2	GND	11	GND
3	HDMI2_RX2-	12	HDMI2_RXCLK-
4	HDMI2_RX1+	13	HDMI_CEC
5	GND	14	GND
6	HDMI2_RX1-	15	HDMI2_DDC_SCL
7	HDMI2_RX0+	16	HDMI2_DDC_SDA
8	GND	17	GND
9	HDMI2_RX0-	18	HDMI2_5V

CN604(to HDMI3)			
1	HDMI3_RX2+	10	HDMI3_RXCLK+
2	GND	11	GND
3	HDMI3_RX2-	12	HDMI3_RXCLK-
4	HDMI3_RX1+	13	HDMI_CEC
5	GND	14	GND
6	HDMI3_RX1-	15	HDMI3_DDC_SCL
7	HDMI3_RX0+	16	HDMI3_DDC_SDA
8	GND	17	GND
9	HDMI3_RX0-	18	HDMI3_5V

CN601(to HDMI4)			
1	HDMI4_RX2+	10	HDMI4_RXCLK+
2	GND	11	GND
3	HDMI4_RX2-	12	HDMI4_RXCLK-
4	HDMI4_RX1+	13	HDMI_CEC
5	GND	14	GND
6	HDMI4_RX1-	15	HDMI4_DDC_SCL
7	HDMI4_RX0+	16	HDMI4_DDC_SDA
8	GND	17	GND
9	HDMI4_RX0-	18	HDMI4_5V

5. Wiring Diagram

CN402(to PC Sound)			
1	GND	4	PC_SL_IN
2	PC_SR_IN	5	NC
3	PC_SL_IN		

CN301(to Speaker)			
1	R+	3	L+
2	R-	4	L-

CN303(to Optical Jack)			
1	VCC	3	GND
2	SPDIF_OUT		

CN1502(to Side USB1)			
1	USB0_VCC_PW	3	USB_DP
2	USB0_DM	4	GND

CN1501(to Side USB2)			
1	USB2_VCC_PW	3	USB2_DP
2	USB2_DM	4	GND

CN1505(to Side USB3)			
1	USB3_VCC_PW	3	USB3_DP
2	USB3_DM	4	GND

CN802(to Monitor OUT)			
1	GND	4	HP_ID
2	NC	5	GND
3	HP_SR	6	HP_SL

CN501(to Component1/AV1)			
1	GND	6	GND
2	COMP1_Y	7	IDENT_COMP1
3	COMP1_PB	8	COMP_AV1_SL_IN
4	IDENT_COMP_AV1	9	COMP_AV1_SR_IN
5	COMP1_PR		

CN401(to Function/IR)			
1	IR	5	MSDA_A5V
2	GND	6	WAKE
3	A3.3V_PW	7	LED_STB
4	MSCL_A5V	8	NC

CN201(to Power Board)			
1	B5V_PW	11	B13V_PW
2	SW_POWER	12	B13V_PW
3	B5V_PW	13	B13V_PW
4	A5V_PW	14	PWM_DIMMING
5	GND	15	GND
6	GND	16	PWM_DIMMING_CPLD2
7	B18VS_PW	17	OVD_ON
8	GND	18	PWM_DIMMING_CPLD3
9	B18VS_PW	19	OVD_LEVEL
10	SW_INVERTER	20	PWM_DIMMING_CPLD4

5-3. Connector Functions

Connector	Functions
CN201 ↔ CN802	Supply power from SMPS to Main Board.
CN1401 ↔ CN505	The LVDS signal transfered from Main Board to Panel.

5-4. Cables For common

Use	Main-SMPS	Main-Tcon
Code	32" BN39-01267E (250mm) 40" BN39-01267N (225mm) 46" BN39-01267N (225mm) 55" BN39-01267E (250mm)	32" BN96-12723J 40" BN96-12723L 46" BN96-12723M 55" BN96-12723N
Photo	